

A LOCATION GUIDE
FOR ROCK HOUNDS
IN THE
UNITED STATES

Collected By:

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2005

Third Edition

A Location Guide for Rock Hounds in the United States

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Preface

Each year I vacation in the field, collecting gem and mineral samples somewhere in the United States or Canada, and each year I spend hours looking through reference materials to plot out my trip (to include locations which interest me).

Last year as I started this annual process, I decided to find a new and more complete reference to reduce my research time. To my dismay, there were some new references for individual states, but the most useful references were no longer in print and were rarely available to collectors at local libraries outside of USGS repositories.

This prompted me to collect all my books and personal references, along with many trips to the reference library, and try to put together a useful tool for some of my friends. It should be said that my personal contribution, outside of editing, was only about 1% of this effort. Be sure to examine the Biography for excellent sources for further information.

The format used was from *Gems and Minerals of America*, my favorite reference (even considering its age — this could almost be considered an updated version). This is by no means a complete end all reference and some of the references are more of historical value for new exploration than anything else, but there is enough information to be useful to most gem and mineral collectors. Generally, **Minerals** are capitalized while **rocks** have been left lower case.

This is the 5th printing and each time updates have been added (and each time I tell myself that I will not do this again).

It goes without saying that property owners should be asked for access and collecting rights, so remember you were told. If in doubt, a county map will tell you who the legal owner is.

Good Hunting.



I would like to thank many people for the career opportunities and encouragement needed to complete this listing. Mitch Albert, Andy Bettman, Eric Kurtz, Vince Kurtz, Erwin Mantei, Art Rueff and others for their help through the years. Special thanks also go to Bill Hyland for editing this book to some form of English and especially my wife Becky for allowing me to put in all the long nights needed to bring this together.

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ALABAMA

Alabama comprises two geological regions. The northeast section is mountainous, constituting the southern end of the Cumberland Plateau and climaxing in 2,407 ft. Cheaha Mt. This crystalline or mineral region is composed primarily of metamorphosed Paleozoic rocks which are exposed and commercially mined in Chambers, Clay, Cleburne, Coosa, Randolph, Tallapoosa, and parts of Chilton, Elmore, and Lee counties. In this contorted, structurally complicated region of slates, phyllites, marbles, quartzites, and conglomerates; the series includes granites, schists (mica, garnet, graphite, quartz), and gneisses, as well as numerous granite pegmatites and ore-bearing veins. Prior to the California gold rush of 1849, this portion of Alabama experienced its own gold rush, largely unprofitable, although gold may still be panned in the regional streams.

Most of the rest of the state, about 60%, is the gently rolling to flat Costal Plain averaging about 500 ft. above sea level. From this predominantly farming region the wide-spreading Tuscaloosa formation discharges chert that has gemmy qualities for cutting and polishing.

AUTAUGA COUNTY

PRATTVILLE, N. 6 mi., and just E of the Birmingham to Montgomery Hwy., a unique deposit as a vertical vein from 10 to 24 in. wide enclosed in a ferruginous sandstone—**red ocher**. (Such deposits were well known to prehistoric Indians.)

BARBOUR COUNTY

BAKER HILL, SE 1 mi. : ① in a deep ravine, as a bed deposit—**yellow ocher**; ② nearby exposures, deep red to variegated—**ocher**.

BIBB COUNTY

GENERAL AREA: ① county gravel pits along the Cahaba R.—**gemmy minerals, petrified wood**; ② area limestone quarries—**Calcite, Celestite, marble**; ③ SIXMILE (hamlet on Sixmile Cr.), area of abandoned mines—**Barite** (crystallized, massive & nodular), **Fluorite**.

CENTREVILLE: ① area stream gravel, road cuts, banks, etc.—**siliceous gemstones**; ② N 5 mi. on Rte. 5: (a) chert quarry—**Barite** crystals, **chalcedony, chert, siliceous oolites**; (b) extending another 5 mi. N & E, adjacent to the Cahaba R. at Sixmile Cr., principally in adjacent parts of T. 25 N, R. 10, 11 E—**Barite** deposits associated with fairly large crystals of **Fluorite, Sulfur** (in cavities), **Limonite**, and some **Calcite** crystals.

WOODSTOCK, area—**Vivianite**.

BLOUNT COUNTY

BLOUNTSVILLE: ① W 1 mi., in prospecting pits—**agate, carnelian, chalcedony, chert**, and **sardonyx**; ② along Hwy. 128, both sides, in gravel pits—**agate**, and **chert**; ③ W 2 mi. on Hwy. 27 on way to Holly Pond—**agate** nodules.

Alabama

BLOUNT-ETOWAH COUNTIES

AREA: ① West Red Mt., top and NW slopes, and ② in Murphrees Valley, as a narrow strip of scattered outcrops about 5 mi. long—**Manganese** minerals.

CALHOUN COUNTY

AREA: ① lead mines—**Galena**; ② sand & gravel pits—**Quartz gemstones**; ③ iron mines—**Hematite, Magnetite, Pyrite**, etc.; ④ limestone and dolomite quarries—**Barite** and **Calcite**.

ANGEL STATION (NW part of Co.), area—**Barite** crystals.

CEDAR BLUFF: ① along shores of the Weiss Reservoir—Rock **Crystal**; ② N 3.6 mi. on Rte. 9 on left side of road—**Fluorite** and Rock **Crystals**; ③ Little R., area—green **Calcite**.

CHESTERFIELD, area manganese mines—**Manganese** minerals.

JACKSONVILLE, W 5 mi., in Trenton limestone, in old Civil War quarries—**Galena**. (Loose pieces of galena are found over the entire state, possibly dropped by prehistoric Indians from lead producing areas of the upper Mississippi Valley. Not a county in Alabama but a tradition of a "lead Mine" worked by Indians.)

PELL CITY, NE 3 mi., area quarries—**black marble**. (The marble belt extends through Calhoun, Etowah and St. Clair counties, with good quality exposures much restricted.)

WELLINGTON, area—**Barite**.

CHEROKEE COUNTY

CENTRE, area Miocene outcrops—**tektites** (dark green and dark blue tektites have been found associated with iron meteorite).

ROCK RUN: ① area mines and furnaces, intercalated with brown iron ore—**Limonite, Manganite, Psilomelane** and **Pyrolusite**; ② area lenses and pockets (also widely distributed throughout Alabama) along unconformable contacts between Cretaceous and Paleozoic horizons, as large pisolitic samples—**Bauxite**.

CEDAR BLUFF: take Hwy. 9 for 3½ mi., then left ½ mi. and search in field—**Quartz** crystals.

LEESBURG: On Lowe farm to N.—**Amethyst**. (for information see Mrs. James Hampton in Leesburg).

SPRING GARDEN, area limestone, as veins cutting limestone—**Fluorite**.

CHILTON COUNTY

AREA: ① east-central region (W and SW of the Coosa R. and E of the Louisville and Nashville RR), area pegmatite outcrops—**Muscovite** mica; ② SE Region: (a) B.T. Childers prospect in NW¼SE¼Sec. 15, T.22 N, R. 13 E, on S bank of a creek in the Hillabee schist—**Arsenic, Arsenopyrite, Chalcopyrite, Copper, Gold** and **Pyrite**; (b) Franklin or Jemison Mine, in NW¼SE¼Sec. 8, on tributary of Mulberry Cr., in the Talladega formation, near remains of a 10-stamp mill—**Gold** and **Pyrite**.

CLANTON, ① W 13 mi. to Sec. 17, the Mulberry Cr. places (most westerly exposures of the crystalline schists), along a branch of Mulberry Cr. exposing Hillabee schists—**Gold** (Stream gravels of Mulberry Cr. and its tributaries have long been worked for gold.); ② as minerals in a graphitic schist—**Kyanite, Mica** and **Vanadium**.

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CLARKE COUNTY

AREA, vein outcrops along county roads—**chert** (resembles chalcedony).

JACKSON: ① N 1½ mi. and just E of hwy., a bed—**yellow ocher**; ② NW 1 mi. to Clarke Co. road: (a) 5.7 mi. from Rte. 43 jct. toward Coffeetown via first dirt road N of jct. area—**chalcedony**; (b) in road cuts and clay banks and along nearby Fire Tower road, and in stream gravels of tributary of the Tombigbee R.—**agate** and **chalcedony**; (c) 6½ mi. from Rte. 43 jct. in banks and rd. cuts—**septarian nodules**; (d) In road cuts NW on Hwy. 1, 5½ and 14½ miles NW of jct. with Hwy. 43—**seam agate**

JACKSON-COFFEEVILLE-GROVE HILL, area deposits in the Tallahatta formation (worked by prehistoric Indians)—**agate** (*Alabama Blue moss*), **silicified wood**.

WALKER SPRINGS, SE 3 mi., near summit of a flat-topped hill, a bed—dark **yellow ocher**.

CLAY COUNTY

AREA: ① pegmatite outcrops in the mica schists, as large platy books found in loose, weathered rock—**Muscovite** mica; ② Rte. 9 crossing of Ketchepedralee Cr., in manganese deposits—**Manganese** minerals and **Rhodonite**; ③ Buzzard Cr. and tributaries—**Chlorite** and green **Quartz**; ④ Pyriton Dist. (stretching 17 mi. NE to SW, many mica and gold mines in hills W of Rte. 9, reached only by rough roads) —**Beryl**, **Feldspar** crystals, **Muscovite** mica, **Quartz**, etc.

ASHLAND: ① area: (a) M & G Mine—**Apatite**, **Garnet** and **Smoky Quartz**; (b) Gibson prospect—**Garnets**; (c) Shirley prospects—**Garnet**, **Kyanite**, **Magnetite** and white **Tourmaline**; (d) along Pleasant Grove road, both sides—**Quartz** crystals; (e) Coosa and Tallapoosa R. drainage area pegmatite outcrops and numerous old mines—**Muscovite** mica. (A line drawn from the Delta Mica Mine in the NE corner of the county with a bearing 45° W will lie at all points about centrally of the observed and developed mica occurrences in Clay Co., as far S as the vicinity of Idaho, or immediately N of Quenelda graphite mines.)

② NW 2½ mi., the Southern Graphite Co. quarry—**Graphite**. (The known deposits of graphite are mostly confined to a zone with a NE-SW trend running from the NE corner of Clay Co. to Millerville, widening out southward, then, after a gap, showing up near Goodwater (Coosa Co.) and continuing a short way into Chilton Co., a length of about 60 mi. with widths from 2 to 5 mi.) Associated with graphite are: **Feldspar**, **Biotite** and **Muscovite** micas, **Quartz** and **Sillimanite**; the unweathered ore also carries **Apatite**, **Garnet**, **Limonite** and **Pyrite**.

CRAGFORD: ① area mines (including parts of Randolph Co.), as veins or disseminated in quartz—**Arsenopyrite**, **Chalcopyrite**, **Galena** and **Pyrite**; ② Garrett Pyrite prospect, NE¼NE¼Sec. 17, T. 21 S, R. 6 E, in numerous pits along creek—**Pyrite**. (The pyrite found on the dumps is not solid, but botryoidal aggregates of small crystal pipes or stalactites, with radiating fibrous textures, as in some forms of limonite.)

DELTA: ① the old Delta Mine, on dumps—**Beryl**, **Kyanite** and **Tourmaline**; ② NW 2.6 mi., the Smith No. 1 Mine—gem **Beryl**, **Feldspar** crystals, **Garnets** (to 1" dia.), **Kyanite** and black **Tourmaline**.

ERIN: ① (a) area RR cuts, as encrustations—**Turquoise** (or **Wavellite**); (b) RR cut NW on Hwy. 49—**Turquoise** (Light green to yellowish green vein Turquoise found in schist.); ② S along W side of Gold Mines Cr. (S of Talladega Cr.): (a) many mica mines and prospects—gem **Apatite**, golden and green **Beryl**, **Albite** and **Microcline**, **Rhodolite** and **Almandite** garnets, **Muscovite** mica and **Tourmaline**; (b) E bank of Gold Mines Cr., in boulders—**Actinolite**, **Chlorite**, **Olivine** and upstream **Pyrope** garnets (massive), placer **Gold**, **Sillimanite** and **Talc**; (c) Bob Lee Mine, abundant—**Garnets**; ③ Pleasant Grove Church: (a) just S, and (b) N 2½ mi.—**Copper** minerals and **Turquoise**.

Alabama

IDAHO (Dist.), in Ashland schists of W part of Co. lying SW of the pyrite mines, in the Hillabee schists: ① T. 19 & 20 S, R. 7 E, several notable old mines—placer **Gold**; ② SW 7 mi.: (a) Harall Gold Mine, Sec. 34, T. 20 S, R. 6 E—**Gold**; (b) Prospect Tunnel, SW¼Sec. 23, T. 21 S, R. 7 E—**Gold**; (c) Stringfellow prospect, Sec. 19, T. 20 S, R. 7 E—**Chalcanthite, Chalcopyrite, Garnets, Graphite, Pyrite and Turquoise**.

LINEVILLE, E by secondary roads N and S of Rte. 46, starting 1½ mi. E of town: ① numerous pegmatite outcrops in area bordered by Crooked Cr. (S) and Fox Cr. (N); ② Barfield, Gibbs, and Griffin mines—**Beryl, Feldspar** crystals, **Garnets, Quartz** crystals and **Tourmaline** (Minerals in veins in schist and gneiss.); ③ S. of Pleasant Grove church on the Hobbs farm—**Turquoise**.

PYRITON, ① area, **Pyrite**; ② E to church, then N to first graded road and E to Lake Simon sign to turn N on logging road—**Beryl and Feldspar**.

QUENELDA, NW 2 mi. on Watts farm—**Rhodonite**.

TALLADEGA, S 13 mi. along Rte. 7 in road cuts—**Alum, Azurite, Graphite, Hematite, Kaolinite, Malachite, Pyrite, and Uranium** minerals.

CLEBURNE COUNTY

AREA of extreme S border with Randolph Co., no communities shown on map but various mining districts overlap into Randolph Co.: ① Dyne Cr., outcrops—**Kyanite**; ② Jim Flemming Mine—**Beryl, Garnet, Hornblende** crystals, **Kyanite, Quartz** crystals and **Tourmaline**; ③ Morris Mica Mine, near center of NE¼NW¼Sec. 21, T. 17 S, R. 10 E, in pegmatite—crystals of **Garnet, Kyanite** and **Quartz** in hornblende muscovite schists; ④ extreme S. border, area deposits—**Barite**.

ARBACOOCHEE (Dist.): ① Arbacoochee Placer Mine, Sec. 17, T. 17 S, R. 11 E; most extraordinary gold placer in Alabama, covering some 600 acres on the top and side of Gold Hill, once employing 600 miners—**Gold**; ② Clear Cr. Placer, Sec. 7, long famed for its rich production—**Gold**; ③ Anna Howe mines, Sec. 34, T. 16 S, R. 11 E, first gold-bearing quartz discovery in district—**Gold**; ④ Valdor property, Sec. 3, T. 17 S, R. 11 E, in bedded vein—**Gold**; ⑤ Hicks-Wise Mine, Sec. 2, deepest gold mine in state—**Gold**; ⑥ Lee Mine, Sec. 2—**Gold**;

⑦ S of Arbacoochee: (a) Golden Eagle or Prince Mine, Sec. 17, T. 17 S, R. 11 E; (b) Crown Point property, Sec. 25; (c) Eckles property, Sec. 23, T. 17 S, R. 10 E; (d) Mossback property, Sec. 35, T. 17 S, R. 11 E—**Gold**; (e) Wood's Copper Mine, Sec. 35, under iron gossan and the first paying copper discovery in Alabama (1874), a rich zone of secondary **Chalcocite**, abundant—**Azurite, Chalcopyrite, Copper** (native), **Copper sulfides, Cuprite, Garnets, Gold, Malachite, Muscovite** mica, **Pyrite** (iron, copper, massive), **Pyrrhotite**, and **Silver**; (f) Lucky Joe, Sec. 25; (g) Pritchett property, Sec. 36; (h) Ayers prospect SW¼SW¼Sec. 33, just E of the Blake cemetery—**Gold**; (i) Smith's Copper Mine—**Chalcanthite, Pyrite, Pyrrhotite**; (j) Stone Hill Copper Mine; (k) other nearby mines—**Copper sulfides, Sphalerite**; (l) Turkey Heaven, area—**Kyanite** (in veins in schist and gneiss);

⑧ E of Arbacoochee: (a) Middlebrook property, Sec. 3, T. 17 S, R. 12 E; (b) Sutherland property, Sec. 34, T. 16 S, R. 12 E, as low grade deposits—**Gold**; ⑨ NE of Arbacoochee, Marion White property, Sec. 6, T. 16 S, R. 12 E, once a source of rich specimen ore and float—**Gold**.

CHULAFINNEE (dist.): ① Chulafinnee Placer, Sec. 14, 15, 16, T. 17 S, R. 9 E (mining mostly along Chulafinnee Dr. in gravels which were 5 to 6 ft. under soil surface)—**Gold**; ② Carr Cr. Placer, Sec. 23, 24, some 240 acres in a deposit of gravel and clay, fine—**Gold**; ③ Rev. King's property, E½NW¼Sec. 22 (3 mi. W of Chulafinnee), old stamp mill, in decomposed quartz—**Gold**; ④ King Mine, Sec. 16, stamp mill, pit covering 2,500 sq. ft.—**Gold**; ⑤ Striplin property, Sec. 22, shallow openings showing stringers of quartz in

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schist—**Gold**; ⑥ Higginbottom property, adjoining the Striplin on NE, thin quartz veins in decomposed schist, obtainable by panning—**Gold**.

HOLLIS CROSSROADS: E 1½ mi. on Hwy. 431, left on SACP road 4199 for ½ mi., then left on dirt road ½ mi. Collect pegmatite in left hand ditch—**Beryl**.

MICAVILLE CHURCH (Take Rte. 37 from its jct. with Rte. 9, 2 mi. after crossing the Tallapoosa R. This road branches to the E along the county line.) Along both sides are numerous: ① old mica mines and prospects—**Muscovite** mica and **accessory minerals**; ② many pegmatite exposures in road cuts—**pegmatite gems** and **minerals**.

COLBERT COUNTY

ALLSBOROUGH: ① area outcrops, excellent—**yellow ocher**; ② NW 4 mi., in Sec. 6, T. 4 S, R. 14 W, in bed and bank of a small stream as a light deposit containing many thin streaks of white clay and overlain by a ledge of ferruginous conglomerate—**yellow ocher**.

MARGERUM, area, highly ferruginous—**Bauxite**.

COOSA COUNTY

AREA: ① Countywide pegmatite outcrops—**Muscovite** mica and **accessory minerals**; ② countywide old gold mines—**Gold**, **Rutile**, **Staurolite** and **Zircon**; (a) Flint Hill, Sec. 17, T. 22 N, R. 16 E, in heavy quartz vein as a trace—**Gold**; (b) Goldbranch, NE 1 mi., at Stewart or Parsons mines, Sec. 4, T. 23 N, R. 17 E, in 200 ft. wide auriferous part of the ridge, first worked by open cuts—**Gold**, bronzy **Pyrite**; (c) Gold Ridge Mine, Sec. 1, 2, T. 21 N, R. 16 E—**Copper** minerals, **Gold**, **Graphite**.

BRADFORD, area pegmatites—**Beryl**, **Corundum**, **Feldspar**, **Quartz** crystals and **Sapphires**. Dark-brown **Corundums** have been found showing asterism.

HANOVER, area as numerous fine crystals—**Corundum**

HATCHETT CREEK: ① Alum Bluff, near mouth of a creek, Sec. 35, T. 22 N, R. 16 E, on an elevation in an 8 ft. quartz vein—**Alum**, **Gold**, **Iron sulfates** and **Pyrite**; ② old Miller mines (1840)—**Gold**; ③ Ivey Mine, NE¼NW¼NE¼Sec. 15, T. 22 N, R. 16 E and 1½ mi. E of the Coosa R. at a point midway between old power plant at Lock 12 and Mitchell Dam—**Muscovite** mica and **accessory minerals**.

HISSOP: ① NE 1 mi., then ¾ mi. SW, area—**Golden Beryl**; ② N 1 mi. on road toward Crewsville, then secondary road left (keep left) to a Y after ¾ mi. (a) Thomas prospect—**Aquamarine** and other gem **Beryl** (lime green, yellow), **Biotite** mica, massive white **Quartz**; (b) several mines just N of the Thomas (Coward, Brown, Hatchet)—**pegmatite crystals**. These mineral occurrences are from veins in schist. (The Rockford mining district runs about 8 mi. E and 8 mi. W of Hissop, embracing about 32 sq. Mi.)

MARBLE VALLEY, extending in a narrow belt along the border of the metamorphic area through Talladega into Calhoun Co., 35 mi. long and averaging ½ mi. wide, with many regional quarries—**marble** (crystalline, gemmy, takes a fine polish).

PENTONVILLE, W on Hwy. 14 for ½ mile to fork, take right fork 1½ mi. to mine at Williams prospect—**Beryl**.

ROCKFORD: area—**Cassiterite**, **Mica**, **Beryl**, **Aquamarine**, **Metastrengite**, **Bermanite**, **Rockbridgeite** and other **gems**, **crystals** and **minerals** (mainly found in pegmatites and veins in schist and gneiss.); ① entire area, as described for Hissop, old mica and tin mines, abundant—**gems**, **crystals** and **minerals**; ② SE limits of town, excavations—**Gold**; ③ N, toward Goodwater, many pegmatite outcrops—**Cassiterite**, **Feldspar** crystals, **Muscovite** and **Quartz**; ④ W 1 mi. on Rte. 22, turn right on trace that dead-ends near Pond Mine, on dumps—**Feldspar**, **Garnets**, **Moonstone**, **Quartz** and **Tourmaline**; ⑤ NE 1 mi., between Rtes. 11 and 22, on tributary to Jack's Cr., the Millsite Tin Mine—**Albite**, **Apatite**, **Cassiterite**, **Epidote**, **Garnets**, **Lepidolite**, rock **crystal**, **Sillimanite**, **Topaz** and black **Tourmaline** (Schorl); ⑥ W 1½ mi., at Bently tin property in

Alabama

SW¼Sec. 14, T. 22 N, R. 18 E (only authentic occurrence of tin in Alabama) —**Cassiterite**. The crystals are well formed octahedral, showing narrow V-faces of the primary prism between the pyramids, to ½ in. dia. Also some **Tantalite** and **Tourmaline** are present; ⑦ W 2 mi. : (a) Pond Mine—**Muscovite**; (b) on N side of Rte. 22, the Two Bit Mine— (see ⑤) ; ⑧ Crewsville, W 2 mi., the 1400 Tin Mine— (see ⑤) ; ⑨ Carroll and Pole Branches, placer sands—**Gold**; ⑩ Gin-House Branch, in stream bed—**Gold**.

NEXBURG, area,—**Kyanite**.

DE KALB COUNTY

FORT PAYNE: ① area iron ore deposits—gemmy **chert**, **Hematite**; ② NW 4 mi., in Will's Valley, only locality developed to any extent in Alabama—**fuller's earth**.

ELMORE COUNTY

AREA: ① gravels of Coosa R. and Tallapoosa R.—**silicified wood** (some palm); ② along shores of Lake Martin—**silicified wood**.

WETKUMPKA, at dam to north—**Garnet**.

ETOWAH COUNTY

AREA, along the S boundary in Creens Creek Valley, deposits—**Barite** crystals.

FRANKLIN COUNTY

WACO, in the Adah Quarry, as large quantities of excellent cabinet specimens—**oolitic limestone**.

PHIL CAMPBELL, in gravel pits 2 mi. N of town on Hwy. 43—**carnelian**.

GREENE COUNTY

PLEASANT RIDGE, area deposits of a resinous yellow to brown hydrocarbon —**Walchowite**.

JACKSON COUNTY

PAINT ROCK: ① area river and tributary gravels—**agate** ("Paint Rock"), gemmy **chert**, **rock crystal** and brown **sardonyx**; ② area dry washes, hillsides, coves, banks, cliffs—**agate**; ③ Jacobs Mt.—**agate**, **chert**, **jasper**.

JEFFERSON COUNTY

BIRMINGHAM, a 4 carat **Diamond** crystal of faint yellow color was found in the alluvium.

LEEDS, SW 3½ mi., area deposits—**Barite** crystals.

PLEASANT GROVE CHURCH, **Turquoise** in thin veins in schist.

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LEE COUNTY

AREA, sandstone quarries—**itacolumite** (flexible sandstone).

AUBURN: ① many nearby localities (check with rock shops in town) ② 10 mi. distant—gemmy **quartzite** (partly opalized); ③ area abandoned mica prospects—**Mica, pegmatite gems** and **minerals**.

OPELIKA, SE, in springs area fields, road cuts, banks, etc., especially behind the Boy Scout camp—rock **crystal**.

LIMESTONE COUNTY

ATHENS: NW 18½ mi. on Hwy. 99 to Good Springs, then S on Hwy. 26, go a mile to Dobbins Branch and collect in field downstream—**Quartz nodules**.

MADISON COUNTY

AREA: ① stream gravels, as float—“*Paint Rock*” **agate**, gemmy **chert**; ② regional barite quarries—**Barite** crystals.

GURLEY: SE on Rte. 72, on small Mt.—gemmy **chert** (grades into **chalcedony**).

MARENGO COUNTY

BARTON’S BLUFF, area—**Calcite** crystals.

MARION COUNTY

PEARCE’S HILL (and area outcrops)—**red ocher**.

MARSHALL COUNTY

GUNTERVILLE, area stream gravels—rock **crystal**.

MONROE COUNTY

JONES MILL, SW 5 mi., in banks of a small stream—**yellow ocher**.

PERDUE HILL, E 3 mi., in a gully just N of the main hwy. to Monroeville, as bright yellow outcrops—**ocher**.

RANDOLPH COUNTY

AREA: ① numerous pegmatite exposures throughout Co.—**Quartz** crystal, **Rutile**, **Tourmaline**, etc.; ② regional stream sands—placer **Gold**, **Rutile**, **crystals**; ③ regional metamorphic or intrusive contact zones—carvable **Steatite**; ④ area manganese mines—**Ankerite**, **Manganese** minerals, **Siderite**. (There are more than 100 mines, some still active in this county, with dumps well supplied with minerals, crystals and gems; most mines are in the belt along the N border with Cleburne Co.; *Arbacoochee District*.)

MICAVILLE (site of first attempted recovery of mica commercially in the state from what was later known as the Pinetucky Gold Mine) —**Muscovite** mica. This district has various mica mines with productive dumps, Pinetucky, NW via Rte. 37 (the Micaville Rd.)

Alabama

and numerous side roads, mines near the Cleburne Co. line E of the Tallapoosa R. and W. of Pinewood Cr.—**pegmatite minerals**; ② just N of Pinetucky, group of famous mines: (a) Great Southern Mine, just off Rte. 37, abundant—**Apatite, Aquamarine, Beryl, Garnet** and black **Tourmaline**; (b) Liberty Mine—gem **Apatite, Garnet, Pyrite** and **Tourmaline**; (c) Haynes Mine—gem **Tourmaline**; (d) Arnott No. 1 prospect—massive **Garnet**; (e) Edwards, Crystal Clear, and many nearby mines—**pegmatite minerals**;

③ Along N border of Co.: (a) Gold Ridge property, Sec. 4, T. 17 S, R. 10 E, in highly garnetiferous mica schist—iron-aluminum **Garnets** (to 3 in. dia., many much decomposed), **Gold** (free-milling, sulfides), **Magnetite** and **Manganese** minerals; (b) Pinetucky Gold Mine, Sec. 12, T. 18 S, R. 10 E, a “rich specimen” mine extensively worked in quartz—**auriferous sulfides, Garnets**, native **Gold** and **Muscovite**; ④ along W boundary of Co. (extending into E section of Clay Co.’s Cragford District), T. 19 & 20 S, R. 9 & 10 E, numerous placer mines, the Manning, Goldberg, Dawkins, Farrar, Bedford Ridge, Pine Hill, Teakle, Morris, Grizzel, etc.—**Antimony, Arsenic, Arsenopyrite, Copper** and **Gold**.

MILNER: ① N, toward Pinetucky, W of connecting road and about midway between, the Jones No. 1 Mine—**Apatite** (blue, spectacular), **Rhodolite** garnet and black **Tourmaline**; ② W: (a) Vickers prospect, dumps, abundant—**Tourmaline**; (b) J.J. New No. 2 Mine—**Garnets** (maroon, to 1½ in dia.); ③ E 2 mi. and just N of Rice Mill—**Apatite** (turquoise color) and **Rhodolite** garnets.

PINETUCKY: SW and NE in pegmatite mines—**Beryl, Aquamarine** and **Mica**.

SHELBY COUNTY

HARPERSVILLE, area deposits—**Barite**.

SAGINAW, area of Longview, old pits—**Barite**.

SHELBY, NW ½ mi., in abandoned brown ore workings—**Red Ocher** containing pebbles of **Hematite**.

VINCENT, in E part of Co., including Harpersville and Wilsonville districts—**Barite**.

ST. CLAIR COUNTY

AREA: ① old copper prospects—**Azurite** and **Malachite**; ② Coosa R. banks and gravels—**Wavellite**; ③ regional barite pits—**Barite**; ④ Beaver Cr. Mountains, in limestone exposures—gemmy **chert**.

BROMPTON, E 1¼ mi., at Prescott Siding, a 2 carat greenish crystal was once found here in alluvium—**Diamond**.

SUMPTER COUNTY

LIVINGSTON, area quarries and gravels of the Tombigbee R. and tributaries, in limestone—**Pyrite** (crusts and nodules).

TALLADEGA COUNTY

AREA: ① ½ mi. E of Clay Co. line and ½ mi. S of Rte. 48, a metamorphic exposure, the Pitts Mine—gemmy **hornblende gneiss** (pistachio green, veined with white quartz); ② SE part of Co., the Riddle’s Mill District (most important gold mining area at the Talladega series), numerous mines in Sec. 16 & 20, T. 19 S, R. 6 E, such as Ribble’s Mine, Woodford

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Tract, Storey, Warwick, and Cogburn or Gold Log Mine—**Chalcopyrite** (with **Bornite** tarnish), **Enargite**, **Gold**, **Magnetite** and **Pyrite**.

ALPINE, at a talc mill—carvable **Steatite**.

SYLACAUGA, area marble quarries—**ornamental marble** (white and cream color) and snowy marble (with **Pyrite** cubes inclusions). This marble deposit is about 32 mi. long, 1½ mi. wide, and 400 ft. thick.

TALLADEGA, 11 Mi. SE near Coleta, turn left on Hwy. 7, then S to where Hatchett Cr. crosses road, collect ¼ mile farther S on E side of road—**Azurite** and **Malachite**.

WINTERBORO, area outcrops and quarries in Cambrian-Ordovician limestones—**Calcite**, **Onyx** and **Steatite**.

TALLAPOOSA COUNTY

AREA: ① This county contains four major gold-mining districts: Devil's Back Bone, Eagle Creek, Goldville and Hog Mountain: (a) Goldville Dist., about 14 mi. long, scene of major mining boom in the early days; (b) the mines of the Devil's Back Bone and Eagle Creek Dists., which occur at varying intervals along a narrow belt of slates, were less important; ② many active and inactive prospects and quarries—**Andalusite**, **asbestos**, **Bauxite**, **Chromite**, **Ilmenite**, **Monazite**, **Scheelite**, **Spinel**, etc.; ③ Coon Creek, near the Tallapoosa R., a prehistoric Indian quarry, as occasional artifacts and as fine specimens—soapstone (**Steatite**, **Talc**) is rather widely distributed in Tallapoosa, Chambers and Randolph counties as a greenish, schistose rock consisting of a felt or mesh of **Actinolite** crystals and **Steatite**, frequently studded with **Garnets** in an inch or more dia.; ④ Ham's Cut, on Central of Georgia RR in igneous dikes—**asbestos**, **Corundum**, etc.

ALEXANDER CITY: ① W shores of Lake Martin: (a) numerous outcrops—**Epidote**; (b) Wind Cr. area, large deposit—**Actinolite**, **Bronzite**, **Cleavelandite**, **Epidote** crystals, **Feldspar** crystals, specular **Hematite** and gemmy **Quartz**; (c) various unexplored localities along the several hundred miles of lakeshore—gems & minerals; ② E shore of Lake Martin: (a) various access areas—**Actinolite**, **Feldspar**, **Quartz** crystal and **Unakite**; (b) many unexplored mineral rich areas around this side of the lake; ③ S, several miles along the river—**Corundum**. (Corundum, Ruby, Sapphire is often associated with Asbestos and Steatite.) ④ NE 13 mi., at Hog Mt., unique old gold mining district in which quartz veins bearing Gold were found in quartz diorite and granite; this locality was where cyaniding was first introduced into Alabama for the recovery of gold—**Arsenic**, **Arsenopyrite**, **Galena**, **Gold**, **Graphite**, **Pyrite**, **Pyrrhotite**, **Sphalerite**, etc.

DADEVILLE: ① area dikes and veins cutting crystalline schists and mica gneisses—**Corundum**, **Chromite**, **Damourite** and **Talc**; ② area mica mines: (a) Kidd Mine—violet red **Garnets**, **Pyrite**, **Quartz** crystals and **Sericite**; (b) Camp Hill, at the Doc Heard prospect—**Garnet**, **graphic granite**, **Muscovite**, **Smoky Quartz** and **Tourmaline**; ③ NE 11 mi., at Carleton (Buttston) Mine—**Muscovite** and **pegmatite gems**.

DUDLEYVILLE: ① area mine dumps (N of Dadeville and W of Dudleyville, on NE-SW angle with N section drained by tributaries of the North Fork of Sandy Cr.)—**Margarite** and **Sapphire**; ② NW 2 - 3 mi., area—**Corundum**; ③ Easton district: (a) area dikes of igneous rocks—**Corundum**, **Chromite** and **asbestos**; (b) E 1¾ mi., at Easterwood Mine—**Muscovite**; (c) Mica Hill, on one of the highest peaks (knobs) in SE Alabama; (d) ½ mi. NW of Mica Hill Mine in NW¼SE¼Sec. 12, T. 22 N, R. 23 E, just S of the Montgomery hwy., at the Berry Mine—**Muscovite** and **Garnets**; ④ Garfield Heard farm (12 mi. E of Dadeville)—**soapstone**.

OUR TOWN: to the E. in fields along Wind Cr.—**Epidote** and **Quartz**.

ZANA, area igneous outcrops—**Beryl**, **Lazurite**, **Pyrite** and **Smoky Quartz**.

Alabama

TUSCALOOSA COUNTY

BROOKWOOD: ① area stream gravels, iron mines, and pits along the Black Warrior R., W to Peterson—**agate, chalcedony, fossils, jasper, Kyanite, Steatite and Vivianite**; ② nearby strip mines reached via Hwy. 116 for 4 mi. W of town leading N to mine—nodular **Hematite, Quartz** crystals, **Siderite, sagenitic agate** and **petrified wood**.

GOETHITE, Brown Ore Mine, on dumps below washer and tipple—**Goethite** and **Limonite**.

TUSCALOOSA, ① S in area gravels, abundant and gem quality—**silicified wood**; ② NE on Hwy. 116 to Girl's 4-H club camp sign, then ¼ mi. more on N to Brookwood location to collect in strip mine area—**Quartz** and **petrified wood**.

ALASKA

America's forty-ninth and largest state has long been facetiously called Seward's Folly or Uncle Sam's Attic, and more truthfully the Billion Dollar Land. Hundreds of great mineral strikes made during the first seventy-five years after the fledgling United States purchased Alaska from Russians for \$7 million (about 2 cents an acre) produced a registered total of more than half a billion dollars, to be exact, \$579,647,730 in pre-World War II gold, silver and copper. Even greater wealth in oil has been developed along the shores of the Arctic Ocean.

From Ketchikan (nearest Alaskan city to Seattle, WA) to Attu Island fronting onto the Kamchatkan shores of Asia is as far as from New York City to San Francisco, or a 3,000 mile span of the far northern longitudes. The main continental bulk of Alaska, reaching to within 1,300 miles of the North Pole, is really the northern terminus of an immense granite batholith that extends along the spine of both North and South America. This pluton is unbelievably rich in commercial metallic ores and un-explored deposits of gemstones. Owing to its general inaccessibility, Alaska will long remain one of the most mineralized but least explored regions in North America.

Geographically, Alaska is divided into four major regions, rather than counties: Southeastern—rugged coastal mountains, fjords, and timbered islands: Alaska Peninsula and Aleutian Islands—volcanically active peninsula and island archipelago extending across the North Pacific almost to within sight of Kamchatka; Interior—sea-level plains forested with birch and spruce with rolling hills that embrace thousands of tundra lakes within the vast drainage system of the Kuskokwim and Yukon rivers, a region nearly twice the size of Texas; and the Arctic Slope—treeless tundra plains sloping northward from the east-west transverse Brooks Range to the Arctic Ocean. Except for jade in the extreme northwest portion of the state, the ore minerals have completely dominated the gemstones, and today it is oil.

Alaska is 99.7% public lands. New prospectors, whether for gemmy substances or for commercially valuable minerals, are sure to be welcomed with open-handed prodigality. However, only those rugged individualists who are well financed are immuned to physical hardship and loneliness, and possess an expert's capabilities for prospecting and solving the survival problems to be encountered in any virgin wilderness should try their luck in any area at all off the little-traveled state highways.

ALCAN HIGHWAY: ① Around poles on right hand side of road at Milepost 1225½—**Smoky Quartz**; ② Upstream in caribou creek at Milepost 118—**agate** and **bloodstone**.

ALASKA PENINSULA and BRISTOL BAY

BRISTOL (NUSHAGAK) BAY: ① area and along the Wood R., many scattered prospects—**Cinnabar**; ② Kujulik Bay, area—**petrified wood**; ③ Mulchatna R., upper reaches, as placer—**Gold**.

KATMAI NATIONAL MONUMENT: ① area outside boundaries: (a) N, Nonvianuk Lake, along shores—**agate** and **petrified wood**; (b) farther N, Iliamna Lake and Lake Clark, in gravels of inflowing streams, as placer deposits—**Gold**; (c) S, Becharof Lake, on N shore and near outlet, as pale red and honey colored pebbles—**carnelian**; ② Valley of Ten Thousand Smokes; area fumaroles and volcanic pits—**pumice** and **Sulfur**; ③ Lake Iliamna, on beaches—**agate** and **bloodstone** (best in Spring); ④ far SW peninsular beaches from Chignik Bay to Tuxedni Bay, as seepages—oil.

PORT HEIDEN, area beach gravels all the way to Port Moller—**agate**.

Alaska

ALEUTIAN ISLANDS

This 1,200 mile long arc of islands begins with Kodiak Island, south of the Kenai Peninsula at the head of the Gulf of Alaska and extends along the south coast of the Alaska Peninsula to Unimak Island, then south and west to Attu across the North Pacific, separating the ocean from the Bering Sea. No transportation exists other than by an occasional ship or by air (usually a chartered “bush pilot”). Each summer, however, sees numerous scientific expeditions working in the Aleutian Islands.

ADAK ISLAND, N shore beach gravels—gem **red jasper**.

AKUTAN ISLAND, area volcanic deposits—**Sulfur**.

ATKA ISLAND, area petrified forest remnants, none of gem quality but of great specimen interest—**petrified wood**.

ATTU ISLAND, SE beach gravels—gray pebbles of **chalcedony** and **jasper**.

KODIAK ISLAND, W coast beaches and contributory lodes—**Copper, Gold, Lead, Silver, Tin** and **Zinc**.

POPOF ISLAND, beach placers and area lodes—**Gold**.

SEDANKA ISLAND, small area high-grade deposits—**Zinc**.

SHUMAGIN ISLAND, Sand Point, area beach gravels—**agate, carnelian, chalcedony** and **jasper**.

TANAGA ISLAND, beach gravels, as pebbles—**agate**.

UNALASKA ISLAND: ① Dutch Harbor, area beach gravels of Captain's Bay to Priest Rock—**agate** (banded, gray), **chalcedony**, green **argillite** and **jasper**; ② crater of Mt. Makushin—**Sulfur**.

UNGA ISLAND, Apollo Mine (operating since 1900)—**Gold**.

INTERIOR REGION (Yukon River Basin)

Larger than many mid-western states, this immense territory contains the most important known placer **Gold** deposits in Alaska. More than \$200 million in gold was recovered from its mines prior to World War II, with the region between Eagle (on the Canadian border) down river to Tanana being most the productive. US Geological Survey Bulletins No. 872 and 907, covering “The Yukon-Tanana Region,” are especially detailed in the investigations of the mineral resources of this section of Alaska. In all the gold mining districts listed below, a chief ore mineral associated with gold is **Stibnite**, along with **Galena** and **Pyrite**.

BONNIFIELD DISTRICT (including the Kantishma and Valdez Cr.), long an important mining center: ① California-Totatlanika Cr. area, as a number of occurrences—**Stibnite, lead-antimony sulfides** and **Jamesonite** (fine grained); ② Eva Cr., near the Liberty Bell Mine and in float near Caribou Cr.—**Ferberite, Gold, Lead** and **Silver**; ③ Gold King, Marguerite, Moose, Platte, and Portage Creeks, many area mines and prospects—**Gold, Lead, Silver** and **Stibnite**.

CACHE CREEK DISTRICT, many placer mines—**Gold**.

CHANDALAR DISTRICT (N of Ft. Yukon): ① Big Cr., ② Dictator Cr., ③ Little Squaw Cr., area placer—**Gold**.

CHENA DISTRICT, about 70 mi. E of Fairbanks, the Palmer Cr. placers, abundant—**Gold** and **Scheelite**.

CHISANA (Shushana) and NABESNA Dist.: ① Big Eldorado, Little Eldorado, Bonanza, Beaver Cr., and many other area placer mines—**Gold**; ② between Erickson Gulch and Bonanza Cr., many claims and prospects—**Gold**; ③ Nabesna Mine area: (a) area pegmatite outcrops, (b) near Mentasta, books and sheets to 12 in. dia.—**Muscovite** mica and **accessory minerals**.

CHULITNA RIVER, upper reaches, many mines—**Gold, Lead, Silver** and **Zinc**.

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CIRCLE DISTRICT: ① Crazy Mts. area—**Stibnite**; ② Deadwood Cr.—abundant placer **Tin**, **Wolframite** and **Cassiterite**; ③ Portage Cr., common—**Cassiterite**; ④ S Fork of Birch Cr.—**Stibnite**. (Throughout interior Alaska, placer **Tin** is found in almost every mining district, except the Kuskokwim region and the Iditarod and Innoko areas. Similarly, placer **Scheelite** occurs rather commonly, this placer **Wolframite** less abundant, especially in the Fairbanks district.)

COLORADO, S 5 mi. along the Alaska RR, on Antimony Cr., lode ore—**Stibnite**.

COPPER RIVER DISTRICT (see Cordova, SE Alaska): ① many area wide-spread mines and deposits—**Copper** and **Molybdenite**; ② Bremmer R. placers—**Gold**; ③ Canyon Cr.: (a) head of, as lode ore—**Nickel** minerals; (b) McCarthy vicinity in the upper Chitina R. Valley, high grade deposits—**Molybdenite**; ④ Kennecott (Nizina) area: (a) part accessible from Chitina, lode mines—**Copper**, **Gold** and **Silver** (the world famed Kennecott Copper Corp. mines and railroad access from Cordova were abandoned in 1938); (b) upper valley area, served by highway from Valdez or Anchorage—**Copper**, **Gold** and **Silver** mines; (c) Chistochina district mines—**Copper**, **Gold** and **Silver**; (d) Nerchina district placers—**Gold**; ⑤ McKinley Lake, area lode deposits—**Gold**.

DONNELLY DISTRICT: ① Alaska Range, Mt. Hayes: (a) N side, between Mt. Hays and Ferry, at 5,000 ft. as float—**Stibnite**; (b) N, in canyon on Ptarmigan Cr., rich ore—**Molybdenite**; ② Rapids Roadhouse, S ½ mi. on Gunnysack Cr. and ½ mi. upstream from road—**Stibnite** (bearing **Gold**).

EAGLE DISTRICT (just W of the Canadian border), placers on Fourth of July, American, Alder, Barney, Woodcutter, and Crooked creeks, and on the Seventymile R.—**Gold**.

FAIRBANKS DISTRICT (principal gold placer area in Alaska and third most productive of lode gold): ① area placer claims covering a broad region—**Antimony**, **Gold** and **Tungsten**; ② area creek gravels—lenses of **Stibnite**, **Gold**, **Quartz gemstone** and **fossils**; ③ Fairbanks: (a) N 70° E from Treasure Cr. to lower Fairbanks Cr., an area 20 mi. long by 1 mi. wide, deposits—**Gold**, **Stibnite** and **fossils**; (b) Ester Dome area, in a 6 mi. dia. mineralized zone—**Gold** and **Stibnite**; (c) NE 15 - 20 mi., country adjacent to Pedro Dome, placers—**Gold**, **fossils** and **petrified wood**; (d) valleys of Cleary, Gilmore, Goldstream, Engineer, and Pedro creeks, placers—**Cassiterite**, **Gold** and **Scheelite**.

FORTYMILE and GOODPASTURE Dist.: ① (a) between headwaters of the Middle Fork and the North Fork of the Fortymile R.—**Scheelite**; (b) in 40-mile area—**agate** and **obsidian**; ② Chicken, NW 10 mi. in Fortyfive Pup, a tributary of Buckskin Cr., abundant placer deposits—**Gold** and **Scheelite**; ③ Ketchumstuk and My creeks; (a) area deposits of a replacement nature, in limestone—**Copper** and **Lead**; (b) upper Ketchumstuk Cr., large deposit—**Stibnite**; (c) E of the Ketchumstuk Cr., in the Middle Fork drainage—**Stibnite**; ④ Jack Wade, Walker Fork, and such lesser camps as Stonehouse, Ingle, Lost Chicken, Napoleon, Franklin, Davis and Poker Creek, placers—**Gold**.

GULKANA, 25 mi. distant, in large pegmatite exposure area—sheet **Muscovite** mica.

HEALY, area—**Amethyst** with **agate** and **Quartz**.

HOT SPRINGS DISTRICT, S of Hot Springs Dome, in basalt dike—**Cobalt bloom** and nickeliferous **Pyrrhotite**.

IDITAROD DISTRICT: ① regional placer and lode veins, many—**Cinnabar**, **Copper**, **Gold**, **Lead**, **Stibnite**, **Tungsten** and **Zinc**; ② Flat, area placers—**Gold**; ③ Otter Cr. (2 mi. S of Flat), rich placers—**Gold**.

INNOKO DISTRICT: ① Little and Ganes creeks, ② Yankee Cr., regional placers—**Gold**; ③ OPHIR, S 5 mi. on No. 6 Pup, tributary to Little Cr., placers—**Scheelite**. (In the Innoko, Kantishna, McGrath and Sleitmute districts, along with **Gold** there is usually **Stibnite** associated with **Cinnabar**.)

Alaska

KOYUKUK DISTRICT (a region embracing a very large tract of land and consisting of three rather widely separated mining areas of interest, mostly placers—**Gold**): ① Gold Cr. gravels, as pebbles—**Stibnite**; ② John R., near Hunts Fork—**Stibnite**.

MARSHALL DISTRICT (including practically all of the W part of the Yukon Valley below Holly Cross): ① area near Marshall, ② in the Bonasila or Stuyahok Valley, placer mines—**Gold**.

RAMPART DISTRICT: ① area mines, and placers—**Gold**; ② on Little Minook, Slate and Hoosier creeks, both placer and lode mines, prospects, claims—**Gold**. (Between Rampart and Tanana, along the Yukon R., on N side, a high cliff of Bituminous coal descends to the water's edge.)

RICHARDSON and FORT GIBSON, area placers—**Gold**.

RUBY DISTRICT, (an ill-defined region extending from RUBY, on the lower Yukon, for 50 - 60 mi. to include POORMAN and adjacent camps), mostly placers—**Gold, Antimony, Lead, Silver and Tin**.

SALCHA DISTRICT, NE of Splits of the Salcha R., in large area of basic igneous exposures—disseminated **Chromite** in peridotite and dunite, **Nickel** minerals and **Platinum**.

STEVENS VILLAGE (100 mi. NNW of Fairbanks): ① area sands of the Yukon R., by panning—**Gold**; ② S, to mouth of the Dall R., then up river in an area about 100 mi. across extending well N of the Arctic Circle, many placer prospects—**Gold**.

TANANA, W, in the Gold Hill Dist. on Morelock and Grant creeks, placer—**Gold**.

TOK DISTRICT, on Boulder Cr. about 7 mi. above the Dry Tok Cr.—**Stibnite**.

TOLAVANA DISTRICT (N and NW from Fairbanks): ① area placers, notably in Lucky Gulch, Amy, Lucile, Ruth, and Olive creeks—chrome **Spinels, Chromite, Cinnabar and Gold**; ② Lillian Cr., N side, cut bank just across highway crossing—**Stibnite**, traces of **Cinnabar and Gold, Nickel sulfides and silicates**; ③ Livengood, Claim No. 16 above Discovery Claim—**Gold and Stibnite**.

WADE CREEK, upper part, on property of Wade Creek Dredging Co.—**Gold and Lepidolite**.

WISEMAN (200 mi. NW of Fairbanks), regional placer and lode mines—**Gold**.

WOOD RIVER DISTRICT, near head of Kansas Cr., deposits—**Stibnite**.

KOBUK RIVER REGION (accessible by air from Kotzebue)

Prospectors interested in this large region, which includes the drainage systems for the Kobuk, Noatak, and Alatna rivers, should be well financed and thoroughly familiar with technologies of prospecting and survival. Minerals include: **asbestos, coal, Copper, Iron, Jade, Lead, Quartz** crystal, **Silver**, etc.

CALIFORNIA CREEK (tributary of the Kogoluktuk R. from the E), as float amphibole and cross-fiber—**asbestos**. (The regional streams contain various derivative minerals of **serpentine**.)

DAHL CREEK: ① area outcrops, as high grade slip fiber—**Chrysotile** asbestos; ② Asbestos Mt., near top in lenses—**Tremolite, asbestos, Chrysotile** asbestos associated with massive **serpentine, Antigorite, Magnesite, Magnetite**, and some **Nickel**; ③ Jade Cr., area—**Nephrite**; ④ (a) Boulders in Dahl Cr. about 150 mi. inland from Kotzebue Sound; (b) at headwaters of creek at 5,000 ft. level—Jade (dark green and gray)

KOBUK RIVER VALLEY: ① E section, in vicinity of Shungnak, as placers—**Gold**; ② W part, near Kiana in valley of the Squirrel R. and especially in its Klery Cr. tributary, numerous placers—**Gold**. Both areas are extremely remote and difficult to reach except by chartered plane. In all regional placers are also found **Platinum** nuggets. ③ Kobuk, W 30 mi., Jade Hills and Jade Mt., and in all regional stream gravels, many outcrops of high quality gem **Nephrite** jade (fairly free of black spots).

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SHUNGNAC DISTRICT: ① Shungnak R. area—**asbestos**, **Nephrite** and **serpentine**; ② prehistoric Eskimo village sites between Shungnak and Kiana, in house pit excavations—**asbestos** and **Nephrite** (some as carved ornaments); ③ W 50 mi., in valley of the Ambler R., placers—**Gold**; ④ Squirrel R. District and Shungnak District are probably the most favorable sections in Alaska for new discoveries of gemstones and commercial mineral deposits, especially **Gold**, **Jade**, **Platinum**, etc. These districts lie in a largely unexplored mountainous region between the Kobuk and Noatak rivers. The deposits on Shungnak R. and Jade Mt. are about 12 mi. W and 35 mi. NW, respectively, of the Dahl Cr. deposits and similarly located with respect to the Kobuk R. Each lies on the S. slope of mountains which sweep up and N from the broad Kobuk lowlands; ⑤ Cosmos Cr., 4 mi. E of Shungnak R. and 8 mi. W of Dahl Cr. **Tremolite** deposits, just above canyon about 11 mi. from the Kobuk R.—**asbestos** and **serpentine** (whitish green float, massive); ⑥ Wesley Cr., 6 mi. W of Dahl Cr. Tremolite mine, near head of creek—**Gold** and other **minerals**.

KUSKOKWIM RIVER REGION

This is an enormous, generally sea level region in southwest Alaska embracing the drainage systems of the Kuskokwim River and its tributaries, all south of the lower Yukon River Valley. The richly commercial gold mining districts revolve around McGrath, Takotna and Medfra in the upper reaches of the Kuskokwim River in an area roughly 300 miles from NW to SE by 150 miles wide.

EEK, KANEKTOK and TOGIAK RIVERS, area gravels, placers—**Gold**.

GEORGETOWN DISTRICT: ① central part of the Kuskokwim Valley (about 45 air mi. S of Iditarod, Yukon Valley) —**Gold** and **Platinum** group minerals (native alloys); ② Georgetown, Takotna, McGrath, Nixon Forks, many good placer operations—**Gold**.

GOODNEWS DISTRICT: ① area placers, especially: (a) on Book Cr. in the Tolstoi district; (b) Granite Cr. in the Ruby district; (c) Slate Cr. in the Chistochina district; (d) Cache and Peters creeks in the Talkeetna district; and (e) from the Kohiltna R. in the Yentna district—**Gold**, **Platinum** and **Platinum** group metals; ② Goodnews Bay (a small indentation on the coast on the E side of Kuskokwim Bay about 125 air miles S of Bethel), high grade placer mines—**Platinum** group metals and **Gold**; ③ Platinum, near Cape newenham on the Bering Sea—**fossil ivory**.

RUBY CREEK, old Pearson and Strand Mine, lode—**Gold**.

SLEITMUT (Sleetmute) DISTRICT: ① area deposits, widespread—**Cinnabar**; ② 8 mi. below Sleitmut on S side of the Kuskokwim R., at Red Devil Mine—**Cinnabar**; ③ upper Swift R., tributary to the Holitna R. (about 75 air mi. from Sleitmut) —**Cinnabar**.

STONY RIVER, S toward Goodnews Bay across the Hoholitna, Holitna and upper Aniak rivers, a barely explored mineralized region—**Copper**, **Gold**, **Lead**, **Silver**, **Platinum**, **Tin** and **Zinc**.

TULUKSK-ANIAK DISTRICT (named from its two rivers), large scale placer operations—**Gold**.

SEWARD PENINSULA (Northwestern Alaska)

This westernmost extremity of North America is second only to the Yukon-Tanana region in the production of placer **Gold**, mostly from the rich concentrations in the sands of the Bering Sea beaches at Nome. The peninsula mines also produced **Copper**, **Bismuth**, **Iron**, **Lead**, **Mercury**, **Silver**, **Platinum**, **Tin** and **Tungsten**. Almost everywhere can be found **Cassiterite**.

BENDELEBEN MOUNTAINS, area pegmatite exposures—**Muscovite** mica.

BLUFF: ① W 7 mi., on California and Coca Cola creeks, placers—**Gold**; ② lower course of Daniels Cr., placers—**Gold**; ③ farther N, on Eldorado and Swede creeks—**Gold**.

Alaska

BONANZA DISTRICT (E side of the Seward Peninsula, forming the E border of Norton Sound), area placers—**Gold**.

COUNCIL DISTRICT: ① Aggie Cr. (tributary of Fish R.), ② Crooked Cr. and Benson Gulch (tributary of Melsing Cr.), and ③ Ophir Cr., all area placer mines—**Gold**.

FAIRHAVEN (including the Candle and Inmachuk districts): ① Bear Cr., many placer mines—**Gold**; ② Candle Cr., ③ Inmachuk R.; ④ up the Kiwalik R. (on Quartz Cr. and on Gold Run a few miles below Quartz Cr.), many placer mines—**Gold**.

KOTZEBUE SOUND, in scarp on S side of sound—**fossil ivory**.

KOUGAROK DISTRICT: ① on the Kougarok R., near mouth of Henry Cr., many placer mines—**Gold**; ② near head of the Kougarok R., in vicinity of Taylor, especially on Macklin Cr. and its tributaries, area placers **Gold**; ③ S part of the district: (a) Coffee Dome area; (b) Iron Cr. and on American Cr. about 8 mi. E of iron Cr., area placers—**Gold**.

KOYUK DISTRICT (includes most SE Seward Peninsula): ① Dime Cr.; ② Haycock vicinity, many area placers—**Gold**; all other area creeks, especially Monument Cr., numbers of open-cut mines—**Gold**; ③ between Little and Dry creeks, extensive dredging operations—**Gold**.

PORT CLARENCE DISTRICT (includes W part of peninsula, especially that part adjacent to Teller and the Imuruk Basin): ① Coyote Cr.; ② Gold Run, Offield Cr., American R., area placer—**Gold**.

SOLOMON: ① E 6 mi., placers—**Gold**; ② Big Hurrah, Jerome, Rock and West creeks, principally open-cut mines—**Gold**.

YORK, are placers—**Cassiterite** and **Gold**.

SOUTH and SOUTHEASTERN ALASKA

ANCHORAGE (Cooks Inlet): ① Archangel Cr., head of—**Gold**; ② Craigie Cr.: (a) head of; (b) just W of Willow Cr. —**Gold**; ③ Fishhook Cr., head of, most productive area mines—**Gold**; ④ NE, Matanuska area, upper part of Willow Creek district at head of Cook Inlet, second most productive lode gold area of Alaska—**Gold**; ⑤ Suisitna region, near head of Nugget Cr. in the Yentna district, many substantial veins—**Gold**; ⑥ Along Matahuska R. at Milepost 72 on Glenn Hwy.—**jasper**; ⑦ at Fire Island, reached by cannery barge—**agate**; ⑧ at Luster's claim in Talkeetna Mts.—**agate** nodules; ⑨ Kenai R. to S—**agate** and **jasper**; ⑩ Achor R.—**petrified wood** and **agate**.

CORDOVA, access port to the great Kennecott copper deposits along the Copper R. of the Interior (around Chitina, Strelina, Copper Center, etc.) —**Copper** minerals, **Molybdenite**, **Pyrite**, etc. (see Interior Region, Copper River District.)

HAINES, E side of Chilkat Valley, area deposits—**Barite**, **Gold** and **Magnetite**.

JUNEAU (Gold Belt): ① Admiralty Island: (a) Hawk Inlet and Funter Bay—**Gold**; (b) Windham Bay—**Gold**; (c) on beaches from Gambier Bay to Wilson Cove and near Point Gardner—**agate** nodules; ② Juneau: (a) at edge of city, the famous Alaska Juneau Gold Mine (by far the largest lode gold mine in Alaska, with a notable "glory hole" behind the mountain, closed for mining but open for tourist visitation), very low grade granite ores—**Gold**, **Silver** (as **Electrum**) and **Lead**; (b) N, in Berners Bay district, at old Kensington and Comet mines—**Gold**; (c) Douglas Island (across Gastineau Channel by bridge), area mines, especially the drowned-out and abandoned great Treadwell Mine—**asbestos**, **Copper**, **Iron**, **Gold**, **Manganese**, **Molybdenum**, **Nickel**, **Stibnite** and **Tremolite**; (d) Indian Reservation, Copper R., area gravels, star Sapphire (gray sapphire and star rubies); (e) Stevens Passage, between Grand Island (20 mi. S of Juneau) and Grave Point, 8 sq. mi. hydraulic operation lying under some 100 fathoms of water, requiring deep water dredging—placer **Gold**.

KENAI PENINSULA (W of Seward): ① Girdwood District, just N of the peninsula and S of Anchorage, extending a few miles N from shores of Turnagain Arm, many mines,

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especially near the head of Crow Cr. —**Gold**; ② Moose Pass-Hope District, an area N of the Moose Pass sta. on the Alaska RR and extending to the old settlements of Hope and Sunrise on Turnagain Arm, many mines and prospects—**Gold**; ③ Nuka Bay (extreme S part of peninsula), many area lode mines and prospects—**Gold**; ④ on Cook Inlet at Salamtsoff beach—**agate**.

KETCHIKAN (District): ① area, including coastal islands, many mines—**Antimony, Chromium, Copper, Gold, Iron, Lead, Molybdenum, Palladium, Platinum, Silver, Zinc**, etc.; ② Cleveland Peninsula, near Helm Bay, large mining district—**Gold**; ③ Kasaan Peninsula, old Mt. Andrews property—**Gold**; ④ Ketchikan, E, in Hyder District, area mines—**Copper, Gold, Lead, Silver** and **Tungsten**; ⑤ Porcupine District, area placer mines—**Gold**; ⑥ Prince of Wales Island: (a) area deposits—**Magnetite**; (b) Dolomi area, at old Valparaiso Mine—**Gold**; (c) Hollis, vicinity, at old Sealevel Mine—**Gold**; (d) Sulzer, at the Green Monster Copper Mine—**Chalcopyrite, Epidote, Grossularite** garnets and **Quartz** crystals. (Some of the best and largest **Epidote** crystals nestled in long single terminated clear **Quartz** crystals come from this world famous location.)

LITUYA-YAKUYAGA REGION, area beach placers exposed to ocean wave action—**Gold**.

PETERSBURG (Kupreanof Island): ① area mines—**Barite, Chromium, Gold, Manganese, Silver** and **Zinc**; ② Glacier and Hamilton bays, beach gravels—**agate, jasper** and **petrified wood**.

SITKA (District): ① Baranof Island: (a) Red Bluff Bay, area gravels—**serpentine**; (b) SE of Sitka, at head of Silver Bay—**Rhodonite**; ② Chichagof Island, W part, second most productive mining district in Alaska: (a) Klag Bay (60 mi. NW of Sitka), and (b) a few miles farther NW, near Kimshan Cove—**Gold** (more than \$20 million in high grade ore at the old \$20 per ounce price), **copper-nickel ores, Gypsum** and **Scheelite**.

SKAGWAY (including the Porcupine placer district), area old mines—**Gold**.

VALDEZ (Prince William Sound): ① many area lode mines—**Gold**. (Most mines in this district can be reached best by boat.) ② Passage Canal zone, as numerous veins exposed by receding glaciers—**Gold**; ③ Knight and Latouche Islands, extensive deposits—**Copper**; Port Wells, area lode mines—**Gold**; ④ Tiekell District (35 air mi. N of Valdez), area mines—**Copper, Gold, Lead** and **Silver**; ⑤ Unakwik Inlet, area vein mines—**Copper, Gold, Lead, Silver** and **Zinc**.

WRANGLE (District): ① area mines—**Barite, Fluorite, Garnets** (to 1" or more in dia.), **Gold, Graphite, Lead, Pyrite** and **Silver**; ② Woewodsky Island, at old Maid of Mexico Mine—**Gold**; ③ Stikine R. mouth, 1¼ mi. SE of Sergief Island, along Garnet Cr.—**Almandite** garnets; ④ Zarembo Island: (a) beach gravels of adjoining Kuuiu Island, and (b) gravels of Saginaw Bay; (c) Agony beach—**agate, jasper** and **petrified wood**; ⑤ Port Houghton, to S—**Garnets** and **Tourmaline**.

TOPKNOT OF AMERICA

Well within the Polar Zone lies the Arctic Slope of Alaska, from the Philip Smith and Davidson mountain ranges on the east to Point Hope on the shore of the Chukchi Sea far north of the Seward Peninsula. Reaching about 600 miles east and west and 150 miles south to north, this desolate, treeless, tundra land slopes gently from foothills of the Brooks Range all the way to the muskeg shores of the Arctic Ocean.

The Arctic Slope, as far east as the lower Colville River, has long been a US Naval petroleum reserve, with major development activities centered in Prudhoe Bay, and mineral locations are prohibited. Transportation is so difficult and expensive that the exploration for gems and minerals outside the federal oil lands has been minimal. Extensive beds of coal are widely distributed throughout the region, and paleontological expeditions from the U. of Alaska have mapped numerous fossil areas since World War II. Placer **Gold** deposits have

Alaska

been profitably panned in the streams of the eastern sections, principally on the Okpilak River. The north slopes of the Endicott Mountains show mineralized outcrops of **Gold** and its usual **associated minerals**.

POINT BARROW, in beach deposits—**Amber**.

ARIZONA

The first white men to visit the “Copper State” were Spanish explorers. Southern Arizona, where the Gila River flows across the entire state is a land of hot desert plains broken by north-south ranges of dry, severely eroded mountains—an immense, empty land that is still little explored for any minerals other than **Gold**, **Silver** or **Copper**. Phoenix not only is the capital city of Arizona but also bears the apt title of the Sun Capital of America.

Northern Arizona is part of the Colorado Plateau, with arid deserts and high, timbered plateaus whose elevations range from 4,000 to 10,000 ft., climaxing in 12,611 ft. Humphreys Park (highest of several peaks in the San Francisco Mountains north of Flagstaff). The Colorado River and the mile deep Grand Canyon slash across the northwestern corner of the state. The Colorado Plateau itself breaks abruptly in a vast east-west escarpment stretching across central Arizona. Known as the Tonto and Mogollon (Muggyyone) rims, the sheer cliffs look down to the cactus studded lowlands of the south.

The dumps of thousands of Arizona mines are fertile hunting grounds for a host of colorful and often valuable ore minerals and a great variety of gemstones, crystals, agatized woods and specimen materials. Much of the state is also rich in agatized woods and Triassic/Jurassic dinosaur bones, which are often jasperized. To avoid climatological problems, collecting in Arizona should be seasonal: the northern half in summer, high and cool; the southern half in winter, warmly welcoming and gentle.

APACHE COUNTY

ALPINE, NW on US 260, 27 mi. to sawmills, then E into Escudilla Mts., N side of rd.—moss **agate**.

CEDAR RIDGE, In the Chinle Formation at Echo Cliffs—**agate**, **jasper** and **petrified wood**.

CHINLE: ① area to N— **agate**, **jasper** and **petrified wood**; ② S on Rte. 27 to Beautiful Valley, area—**petrified wood**.

CONCHO to ST. JOHNS: ① area around Concho, and ② E along both sides of US 180 to just W of St. Johns—**petrified wood**, **agate** (some dendritic), **chalcedony** and **gemmy chert**.

FORT DEFIANCE, area—**Pyrope** garnet and **Peridot**.

GANADO, area SW in area of Pipe Spring National Monument—**agatized wood**.

MEXICAN WATER: ① W 5 mi. at Garnet Ridge, in loose sand—**Pyrope** garnet (*Arizona Rubies*); ② N 10 mi., Moses Rock field in San Juan Co., Utah—**Pyrope** garnet.

NAVAJO, E along both sides of US 66 to Sanders—**agatized wood**.

ROUND ROCK, WSW 12 mi., to Round Rock, area—**agatized wood**.

SANDERS, broad area surrounding town and including Witch Well—**agatized wood**.

ST. JOHNS, area along both sides of US 666, both N and S—**agatized wood**.

TANNER SPRINGS: ① SW, in Tanner Wash, and ② N of Pinto Siding (Santa Fe RR)—**silicified wood**.

APACHE, COCONINO and NAVAJO COUNTIES

Painted Desert, region embracing a large geographic area of Triassic Chinle Formation consisting of mauve to variegated clays: ① as microscopic particles disseminated in the clays—**Gold**; ② on surface of draws, washes, slopes, etc.—**fossils** and **petrified wood**.

COCHISE COUNTY

BISBEE (District): ① area copper mines, dumps, abundant—**Aragonite** (fluorescent), **Azurite**, **Bornite**, **Brochantite**, **Calcite** (fluorescent), **Chalcantite**, **Chalcopyrite**, **Chalcotrichite**, **Chrysocolla**, **Cuprite**, **Malachite**, native **Copper**, **Shattuckite**. (Chalcocite is most important in disseminated ore, locally abundant as a secondary mineral in limestone replacement deposits.) ② at Shattuck Mine—**Hemimorphite** (fluorescent), **Shattuckite**, **Sphalerite** (fluorescent). ③ Copper Queen Mine (one of the most outstanding US copper localities), as magnificent crystal specimens—**Azurite**, **Malachite** and native **Silver**.

BOWIE, N past RR tracks, then take Right fork and keep right as you go NE 21 miles toward Peloncillo Mt.—**Fire agate**.

CARRIZO MOUNTAINS, W, in Morrison formation (sandstone) —**Carnotite**.

COCHISE (in NW part of Co.), area deposits—**Copper**, **Gold**, **Lead**, **Silver**, **Tungsten** and **Zinc**.

COURTLAND, at Turquoise Ridge $\frac{3}{4}$ mi. NW—**Turquoise**.

DON CABEZAS (and the Teviston District), placers—**Gold**. (practically all the gulches and dry washes in this area contain gold bearing sands.)

DRADOON, ① in Dragoon Canyon (once a refuge of the Apache war Chief Cochise), area of 2,260 acres owned by Dragoon Marble Quarries, Inc., in 7 major veins—**marble**; ② Arizona Mine, 3 mi. N—**chalcedony** and **Chrysocolla**.

GLEASON-COURTLAND DISTRICT: ① area mines, as important constituents of enriched copper ores—**Chalcocite** and other **Copper** minerals; ② Costello Mine—**Willemite** (fluorescent), **Wulfenite** crystals; ③ turn N from Gleason just W of old Santa Fe RR to South Courtland (ghost town) and North Courtland: (a) just N, old copper mines—**Brochantite** and other **Copper** minerals; (b) NW $\frac{3}{4}$ mi., to Turquoise Mt., old Tiffany Turquoise Mine (1880's) —**Ilmenite** and gem **Turquoise**; ④ SE, across abandoned RR to Douglas, turn N to operating copper mine, fine specimen materials—**Bornite** (*peacock ore*).

JOHNSON, nearby in E foothills of the Little Dragoon Mts., as large deposits—**Copper** minerals and **Molybdenite**.

PEARCE, Pearce Hills, Commonwealth, and other mines, abundant—**Embolite** (a major **Silver ore**).

TOMBSTONE (District): ① many area great mines, especially along the Empire-Contention dike, mineral specimens abundant on all dumps—**Argentite**, **Aurichalcite**, **Azurite**, **Barite**, **Bornite**, **Bournonite**, **Calamine** (or **Hemimorphite**), **Cerargyrite**, **Chrysocolla** (widely distributed), **Connellite**, **Copper** (native), **Covellite**, **Cuprite**, **Galena** (bearing Tellurium), **Gold**, **Hydrozincite** (some fluorescent), **Jarosite** (common), **Plumbojarosite**, **Pyrite**, **Pyromorphite** (associated with crystals of Wulfenite in outer layers of oxidized Lead ores), **Rosasite**, **Stromeyerite**, **Sulfur**, **Tenorite**, **Tetrahedrite** (high in Silver), **Thaumasite** (rare), **Vanadates of Copper, Lead & Zinc**, **Willemite** (fluorescent), **Wulfenite** (common but not abundant); ② In addition to these, the following mines carry further indicated minerals: (a) Empire Mine—**Bromyrite** and native **Silver**; (b) Ingersol Mine—**Famatinite**; (c) Lucky Cuss Mine—**Alabandite**, **Alamosite**, **Hematite** (100 ft. W of the dumps) and **Hillebrandite**, **Queitite**; (d) Silver Thread and Sulphuret Mines—**Sphalerite**; (e) State of Maine Mine—**Embolite** (as a major **Silver ore**); (f) Tombstone Extension Mine—**Galena**; (g) Toughnut Mine—**Chalcocite**, **Famatinite**, **Brochantite** and **Smithsonite**; (h) West Side Mine—**Hessite** and **Smithsonite**; (i) West Side Quarry "Roll"—**Aurichalcite** (pale blue crystal aggregates).

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COCONINO COUNTY

FLAGSTAFF: ① area, Brown Onyx Quarry—onyx; ② NE via US 89, Sunset Crater: (a) area of this and nearby cinder cones, and (b) W, in the San Francisco Mts.—**Sulfur**.

FREDONIA: ① W 15 mi. on Rte. 389 into Mohave Co., Pipe Spring National Monument, area—**petrified wood**; ② W 29 mi., Colorado City, area—**petrified wood** and **Celestite** crystals; ③ E on dirt road, then N to Paria (ghost Mormon colony), area—**petrified wood**; ④ SW 37 mi., in Hack's Canyon, an extensive **Uranium** deposit—**Copper** minerals, **Metatorbernite** and **Torbernite**; ⑤ ESE to House Rock, area gulches and washes of the plateau—**petrified wood**.

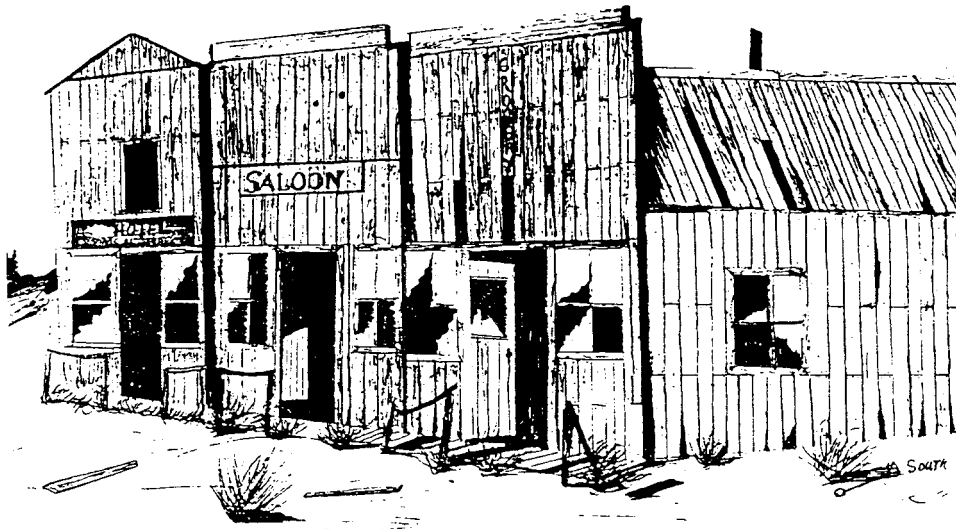
GRAND CANYON (S Rim community): ① area pegmatite exposures (not easy to reach), as octahedral crystals to 1" dia.—**Magnetite**; ② scattered regional ore deposits—**Bornite**, **Chalcocite** and **Cuprite**; ③ the Inner Gorge (by trail to the N Rim), ½ mi. downstream from Monument Cr., abundant—**Sillimanite**.

JACOB LAKE, region of the Kaibab Plateau in **chert** beds of wide extent, as impregnations—**Azurite** and **Malachite**.

LEES FERRY (on the Colorado R. near the mouth of the Paria R.) —**petrified wood**.

MARBLE CANYON: ① SW 2 - 3 mi. on US 89 in canyon breaks of the Chinle cliffs to the west: (a) scattered over alluvial surfaces—**Carnotite** wood (rich in **Vanadium** and **Radium**), green **agate**; (b) deep within the contributing canyons, weathering out of the sandstone formations—**Carnotite** logs; ② SE on US 89 toward Bitter Springs and The Gap, area washes and draws—**petrified wood**.

MOENCOPI: ① NW 9 mi., around Willow Springs, and ② 10 mi. E of Dunns, in Nokai Cr. Canyon—**siliceous wood**.



GILA COUNTY

AREA, in the Sierra Ancha Mts.—**Sodium Zippeite** (fluorescent).

Arizona

CHRYSOTILE (W of Seneca and US 60) and Cienga, Salt R. Canyon asbestos mines—**Chrysotile** asbestos and gem **serpentine**.

COOLIDGE DAM: ① park below dam on E side of river, area above roadway—**agate**, **native Copper**, rock **crystal** (some with **Amethyst** tips) and **Andradite** garnets; ② SE 12 mi., the Stanley Butte district in Graham Co.

GLOBE DISTRICT: ① Alter Mts. (on Apache Indian Reservation) —**Andesine** and andesine **Sunstone**; ② area great copper mines: (a) Buffalo and Continental Mines, and (b) Dominion Mine—rich assortment of **Copper** minerals; ③ up Pinal Cr. from town, placer—**Gold**; ④ SE 6 mi. and E of Sixshooter Cr., at Gap and Catsclaw Flat placer—**Gold**; ⑤ W 6½ mi., at Keystone and Live Oak Mines—**Chrysocolla**, chrysocolla-stained **calcedony**, rock **crystal** and other **Copper** minerals; ⑥ WNW: (a) Lost Gulch, and (b) Pinto Cr., area placers—**Gold**; ⑦ N, in the Apache Mts. and W, in small gulches draining into Richmond Basin, placers—**Gold**; ⑧ S 24 mi. on Rte. 77, then W to Dripping Springs, NW of Cowboy Gulch on SW side of Dripping Spring Wash as placers—**Gold**; ⑨ Globe, take dirt rd. 10 mi. E of dam to Stanley Butte, then go 1½ miles S to shack for garnets in vugs in gneiss—**Andradite** garnets (yellow and brown).

MAZATZAL MOUNTAINS, Slate Cr. deposits—**Cinnabar**.

MCMILLAN (ghost town) —**Silver** minerals and native **Silver**.

MIAMI: ① area great copper mines—**Copper** and **Silver** minerals, **Molybdenite**, etc.; ② broad region N and W—**Apache tears** (obsidian); ③ W 5 mi.: (a) Castle Dome Mine, and (b) NE, the Golden Eagle Mine, in area gulches as placer—**Gold**; ④ the Miami Mine—**Aikinite**, **Enargite**, **Tennantite**.

PAYSON (District): ① area copper mines, the Silver Butte Mine and the Oxbow Mine—**Copper** minerals, **Epidote**, **Fluorite** and **Diopside**; ② N, toward Tonto and Mogollon rims, area canyons and washes, as float—**Gold**; ③ W 4.8 mi. past high school and country club to S-trending dim road (parallel to main road, unmarked), then W 1 mi. onto North Peak Trail (on N) with Cypress Thicket due W, both sides of trail for 1½ mi.—gem **agate**, **jasper** and **septarian nodules**; ④ E 14 mi. on Rte. 260 to Diamond Point, turn N 4 mi. toward lookout—rock crystal; ⑤ E about 50 mi. on Rte. 260 to area of USFS guard station, surrounding forest—gem red jasper; ⑥ from (4) go another 8 mi. NW to area about 1 mi. from river, abundant—**agate**, **jasper** and crystal lined **geodes**; ⑦ N of Hwy. 87 14 mi. to W turnoff to Natural Bridge (3 mi. W of Hwy. 87), area—gem **serpentine**.

PERIDOT, area in volcanic bombs of **Olivine** as large crystals—**Spinel** (possibly **Picotite**).

ROOSEVELT: ① SE on Hwy. 88 to jet. with Rte. 288, then N 1¼ mi. to windmill, go through gate and up dry creek bed to old blacksmith shop, area, especially upstream—**asbestos**, **Jade**, etc.; ② 15 mi. NE of E end of Roosevelt Reservoir, area—**agate** and **jasper**.

SAN CARLOS: ① SW 2½ mi., at Peridot Mesa—**Peridot**; ② San Carlos Reservation, S bank of Gila R. below Coolidge Dam, area—**agate**, **Garnets** and native **Copper**.

GILA-PINAL COUNTIES

AREA straddling both sides of the Co. line, in outcrops of the Pinal schist near post Cambrian granitic rocks, locally abundant—**Andalusite**, **Sillimanite** and **Tourmaline**.

GRAHAM COUNTY

ARAVAIPA DISTRICT (W side of Colorado National Forest): ① Grand Reef system veins—**Argentite**; ② La Clede Mine—native **Silver**; ③ Ten Strike Group—**Chalcocite** and other **copper minerals**.

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BYLAS, N, in many outcrops across the San Carlos Indian Reservation—black **Hypersthene** and **Peridots**.

FT. THOMAS, S 18 mi. on US 70, turn onto Black Rock rd., area both sides—**agate**, **chalcedony**, **jasper** and **silicified wood**.

SAFFORD: ① N, in Lone Star District, as complex low-grade ores—**Copper** minerals and associates; ② E 10 mi. on US 70 to jct. with US 666, then NE on US 666: (a) all way to Guthrie in Greenlee Co., continuous localities along both sides of the hwy.—**agate**, **chalcedony roses**, **jasper** and **petrified wood**; (b) 8 mi. NE of jct., rough track turns N, park and walk along it short distance to end, all area—**agate** (red, brown, and green moss rivaling *Montana moss agate* for quality), **chalcedony** (fluorescent green), **chalcedony roses**, **Apache tears** and **jasper**; ③ E 14 mi. on US 70, turn N 7 mi. on dirt rd. to Gila R., area chiefly upstream from mouth of Bonita Cr., placers—**Gold**, ferruginous **chert** pebbles, abundant black sand.

STANLEY DISTRICT (Crystal Peak, Limestone Mt., Quartzite Mt., ghost town site of Stanley). This area is best reached from Coolidge Dam, Gila Co., E 10 mi., then S on rough rd.: ① area along both sides of road—yellow **garnets**; ② 2 mi. S to Stanley town site on N flank of Stanley Butte: (a) widespread area about town site, especially above old post office, and (b) area washes, slopes, draws, etc., on adjoining mts.—**Andradite** garnets and **Fluorite** in Barite gangue; (c) Cold Springs prospect, contact metamorphic ores—**Stibnite**; (d) Stanley's Deer Cr. Basin and S side of Copper Reef Mt.—**agate**, **chalcedony** (nodular and rose), **jasper**, etc.; ③ 1½ mi. S of town site, area above an abandoned residence—**Garnets**, gemmy **chert**, fossils and **Quartz** crystals.

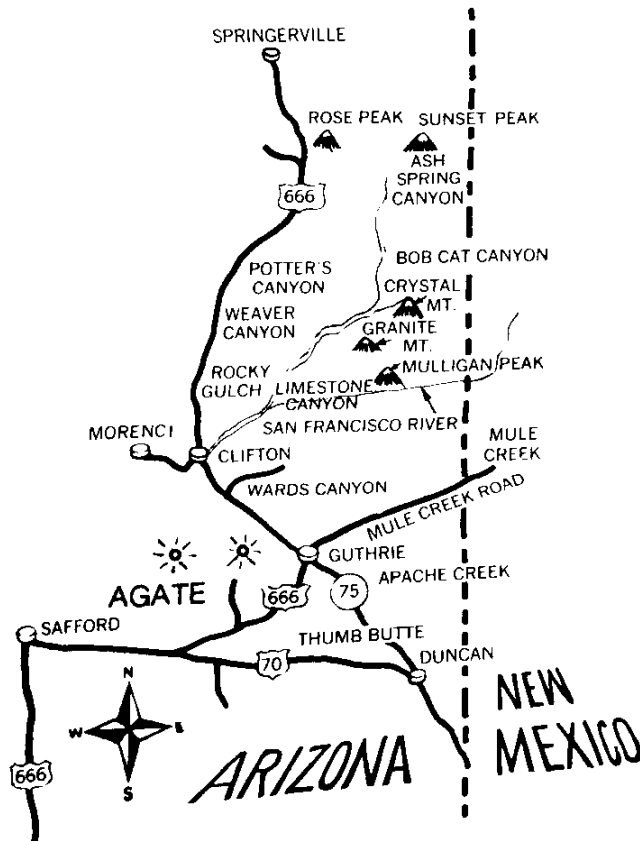
WINKLEMAN, 2 mi. up the Gila R., in fissures 6 - 8 in. wide in exposures of Mississippian limestone along river banks—**Nitrocalcite**.

GREENLEE COUNTY

AREA: Most sections of this county reveal many locations for gemstone hunting, and casual prospecting along the sides of practically all roads is productive—**agate**, **chalcedony** (nodular and rose), **jasper**, gemmy **silicified wood**, etc. ① Ash Spring Mt. and Ash Spring Canyon, slopes, washes, draws, creek beds and banks, etc.—**agate**, **chalcedony** and **jasper**; ② Chase Cr. Canyon, in cliffs of granite porphyry, as bright green encrustations—**Gerhardtite**; ③ Peloncillo Mts., area—**agate** (pastel), **chalcedony** and **jasper**.

CLIFTON: ① very many gem areas, inquire locally: ② North Clifton to second bridge above the Phelps Dodge store, cross river 1½ mi. to cattle guard, then E onto right-hand rd. in a canyon, then 0.2 mi. to trail, park and walk up Limestone Canyon—gem **agate**; ③ E 15 mi.: (a) Mulligan Peak, N of peak—purple **agate**; and (b) W of peak (similar material also found on side of Granite Mt.)—**nodules**; (c) Ward Canyon, areas—red **agate**; ④ NW, along the Coronado Trail (US 666), many area mine dumps—**Chrysocolla** and **Turquoise**; ⑤ NE 7 mi., along the San Francisco R. in Limestone Canyon—purple **agate**; ⑥ S 9 mi. on Rte. 75 and SW on US 666 to Three Way drive-in theater (13.7 mi.), turn through gate on N side of road, go about 1 mi., all area along both sides of road—**fire agate** and **chalcedony**; ⑦ SE 14 mi., Mule Cr. rd., along both sides—**chalcedony geodes**; ⑧ SE 15 mi., at York, area—**agate** (banded and fire), **carnelian** and **jasper**; ⑨ both sides of hwy. S to Duncan on Rte. 75—**agatized wood**; ⑩ Crystal Mt., trail to right around peak—**Fire agate**; ⑪ (a) above Bobcat Canyon, cross river at Colorado Gulch and take road on right at cattle guard, NE of Ash Springs Canyon **agate** lies in foothills of Sunset Peak—**agate** and **jasper** (blue and black); (b) near Clifton, west of river at Colorado Gulch and Weaver and Potter Canyons; ⑫ N from Clifton on US 666, first canyon to left 1 mi. S of Apache National Forest—blue **agate** and **carnelian**.

Arizona



DUNCAN: ① several area properties—**Fluorite**; ② SE 12 mi. on US 70 from old New Mexico checking station, then 14 mi. on dirt rd., area—**agate, chalcedony, jasper** and **petrified wood**; ③ SE 26 mi. on Hwy. 70, then W 20 mi. to Brister Willow Springs ranch, dirt rd. at last cattle guard before ranch and go 3 mi.—**fire agate** and **chalcedony roses**.

GUTHRIE: ① both sides of US 666 W toward Safford—**cryptocrystalline quartz** gemstones; ② SW on US 666 toward Solomon: (a) summit of low pass through Peloncillo Mts., area between low rounded knolls, extensive field—pastel **agate, chalcedony, jasper**, etc.; (b) just below summit on W side, area—nodules (**agate** and **chalcedony**), **Geodes** (crystal lines, fluorescent apricot); ③ farther W at point where rd. reaches base of mts., turn N 1.6 mi. on rough rd. through low hills, at their top beneath a basalt ledge, abundant—**agate, chalcedony** (nodules and rose) and **carnelian** nodules.

MORENCI, area of great mines: ① Morenci, Detroit, Manganese Blue, etc.—**Azurite, Chalcotrichite, Malachite**, etc. (The mines of the Clifton-Morenci area are rich dissemination of ore minerals in veins, in places as solid seams 2 - 3 ft. thick—**Azurite, Chalcocite** and **Malachite**; while in the veins also occur **Chalcopyrite, Molybdenite, Pyrite** and **Sphalerite**.) ② Copper Mt. and Mammoth Mines, as snow-white mammillary masses—**Kaolinite**, with **Azurite** and **Malachite**.

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MARICOPA COUNTY

AREA: ① Alama Mt.—**Variscite**; ② Aztec Mt.—**Chrysoprase**; ③ Gila Canyon, area gravels and sides—**Chrysoprase** and **Garnet**; ③ in the Harquahala Mts.—**Tremolite** (fluorescent).

AGUILA: ① Big Horn Mts., area deposits—**Pyrolusite** with **Manganite** or **Psilomelane**; ② SE, in Vulture Mts., in tuff—**Carnotite**; ③ E end of Harcuvar Mts. via dirt rd., area along way—**chalcedony roses** (pink); ④ nearby town, a wash leading toward Harcuvar Mts.—**Apache tears**.

ARLINGTON, turn N at cattle pens to RR to July 4th Butte, all area beyond RR to Saddle Mt., good gem hunting—**agate** and **chalcedony roses**.

BEARDSLEY, N 12 mi., in White Peak district—**Wulfenite**.

BUCKEYE, W 2.7 mi., cross RR onto left fork and turn NW on Salome rd.: ① NW 5.7 mi. to Wintersburg (ghost camp), area to S on low mesas—banded **Apache tears** and smoky **Topaz**; ② NW 15.9 mi. to cattle guard, turn S on dirt rd. to base of mt. (or at 17.9 mi. turn S 1 mi. then W 2.9 mi.), park, all surrounding area—**agate** and **chalcedony roses**. (Best locality around top of peak.)

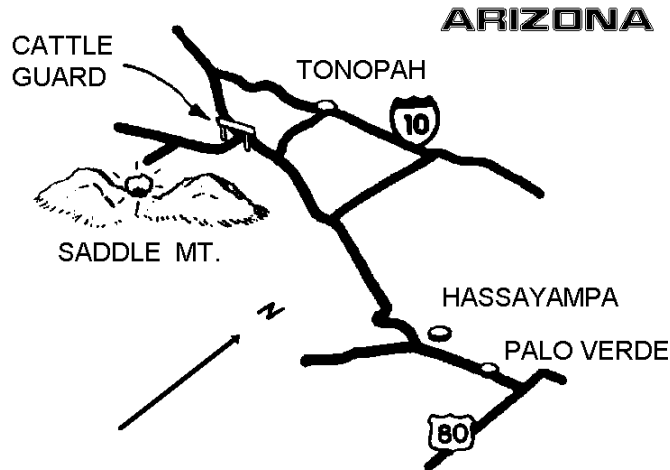
CAVE CREEK: ① Red Rover Mine—**Chalcocite** and argentiferous Tetrahedrite; ② CAVE CREEK-NEW RIVER cutoff road: (a) SW 4 mi., both sides of rd.—**agate**, **Gold**, orbicular **jasper** and **Quartz**; (b) W on cutoff rd. from jct. S of Cave Creek 1¼ mi., park, hill on far side of creek—**red jasper**; (c) W 2½ mi. to N trending rd., on this road 1½ mi., area of old Go John Mine—**Gold**, **Silver**, **Copper** minerals, red **jasper** and blue stained **Quartz**; (d) NW 6½ mi., under power line to S trending private rd. (permission at house), go on it ¼ mi., area—**Magnetite**; (e) NW 10½ mi. (2 mi. N of Sears Ranch rd.), to wide wash, N side of rd. on hillsides—**agate**; (f) in area about 1 mi. NE of a realty venture subdivision (2 mi. E along *Mours Blvd.*), in area around small hill—white *Headchese* **agate**; (g) NW 11½ mi., on E side of rd. many diggings and trails up and along a cross wash—scenic **agate**; ③ Seven Springs-Bloody Basin Rd., all area—**agate** and **jasper**; ④ from Carpenter's Rock in center of Cave Creek, N 8 mi. to poor E trending rd. to Bartlett and Horseshoe dams: (a) S 2 mi. on poor rd., area—**Fluorite**; (b) W 7 mi. (5 mi. E of jct.) toward Bartlett Dam, turn N 2 mi. to W trending jeep rd. to quartz outcrop—**radioactive nodules** and **thunderegg**s; (c) 7 mi. N of jeep rd. turnoff to Horseshoe Dam caretaker's house, area to W and N—**agate**; ⑤ N 13 mi. from Cave Creek, dirt rd. W to Rackensak Mine, farther S to another old mine—**Gold**; ⑥ Seven Springs (on Co. line), see in Yavapai Co.

GILA BEND: ① S 15 mi., in sandstone and conglomerate—**Celestite** and **Gypsum**; ② S 23.6 mi. (18.4 mi. N of Ajo, Pima Co.), turn E on old rd. across RR, many miles to Hat (Table Top) Mt.: (a) area draws, washes, slopes, etc.—**agate** and **chalcedony**; (b) farther E, along ledges—crystal lined **geodes** and **chalcedony roses** (many fluorescent); ③ (a) 10½ mi. S on Hwy. 85, then Left 36 mi. on jeep road to Javelina camp to NW at base of mesa—**obsidian**; (b) NW at base of mesa, in wash—**geodes**.

GLENDAL (inquire locally for rd. to Black Canyon): ① Arizona Agate Mine, area of surrounding washes, draws, hillsides, etc.—gem **agate** (all varieties); ② scattered localities along the Cave Cr. rd.—**agate**, **chalcedony** and **jasper**; ③ all regional side rds. leading toward the mts.—**gemstone** and **minerals**.

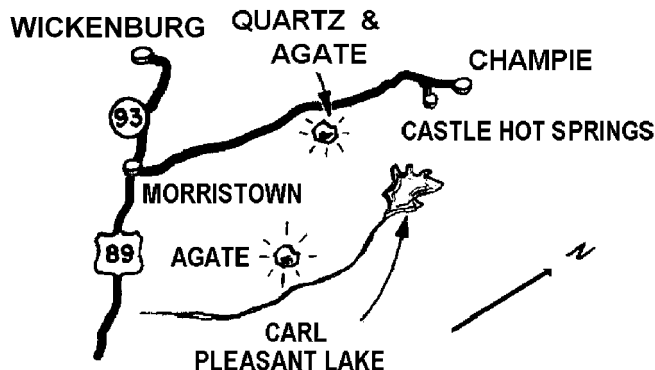
HASSAYAMPA, ① Take I-10 to Tonopah exit, then go 3 mi. S and W, 5 mi. to turnoff at a cattle guard onto a dirt rd., S and W 1.8 mi. to a faint road S across flats to base of saddle Mt.—**chalcedony** (white, pink), **chalcedony roses**, **quartz** found in brown rhyolite; ② NW 22 mi., found in cliff high on E side of Saddle Mt. between peaks, and some in the fan below peak—**fire agate**; ③ S 8 miles on Gillespie Dam rd., then 21 mi. W to Fourth of July Peak, search in debris on S side of pass—**chalcedony geodes**.

Arizona



HYATTS CAMP, N 1¼ mi. on Phoenix-Cavecreek Rd.—**Lazulite**.

MORRISTOWN, NE 21.9 mi. on gravel rd. towards Castle Hot Springs: ① then 1.9 mi. N, park at trail entrance to old mine, walk steeply uphill about 1¼ mi., area—**Calcite**, **Manganite**, **Pyrolusite**, **Quartz** crystals, etc.; ② note pegmatite outcrops on roadsides from entrance into mts.—**Mica**, **Garnet**, **Hornblende**, **Feldspar** and black **Tourmaline**; ③ area both sides of rd. all the way from Morristown to Castle Hot Springs—**agate**, **chalcedony**, **chert**, **jasper** and **Schorl**; ④ Castle Hot Springs (see in Yavapai Co.), (a) in area just above hotel, in creek to S, (b) and in draws off main canyon where stream flows—**jasper**, **agate** and **quartz** crystals; ⑤ Champie Ranch, go N on road (fee) —**agate** nodules; ⑥ road from Castle Hot Springs S along the Agua Fria R., prospect anywhere on both sides of rd.—**quartz family gemstones** abundant. (This entire region is blanketed with cholla cactus, extremely difficult to penetrate, and the best specimens seem invariably to lie under the largest cacti.)



PHOENIX, N along Black Canyon Hwy. (Rte. 69): ① N 18 mi. to Skunk Cr. at mile post 219, park, walk 1¼ mi. downstream—pink **chalcedony**; ② NEW RIVER, area stream gravels especially in New R.—**agate**, **chalcedony** and **jasper**; ③ N 42 mi. to mile post 242,

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just S of Rock Springs turn E through gate to obvious diggings—**copper stained minerals** (gem quality); ④ NW of Phoenix, in area gravels of the Agua Fria R.—**agate, chalcedony** and **jasper**; ⑤ NW 45 mi., San Domingo Wash, placers—**Gold**; ⑥ ENE 45 mi. and 9¼ mi. W of Roosevelt Dam, at W base of second peak from S in Four Peaks, elev. 6,500 ft., reached via USFS rd. from dam plus 18 mi. hike, in walls and loose in dirt—gem **Amethyst** (among the finest in the world).

ROOSEVELT DAM, SW on Apache Trail (Rte. 88) to Port of Phoenix on Canyon Lake Reservoir, then S 1½ mi., area—**chalcedony geodes**.

TONOPAH (NW part of Co.): ① broad surrounding area to W and N toward Salome in Yuma Co., fine, abundant—**agate** and **chalcedony roses** (orchid color); ② W on dirt rd. to Saddle Mt. area of Eagle Trail mts., area washes and surfaces—**agate** (fire and moss), **carnelian** and **chalcedony**.

WICKENBURG: ① Hassayampa R. gravels, sparingly present but notably abundant for several miles below the mouth of San Domingo Wash 7 mi. SE of town—**Gold**; ② NE 2 mi., deposits—**Bentonite**; ③ SW 14 mi., Vulture Mine (noted in early days for production)—**Gold** and **Pyrite**; ④ NE, large mining region, Yavapai Co. (The entire region surrounding Wickenburg shows literally hundreds of old mine dumps and prospects visible from all access roads. Solid **Gold** nuggets, along with **Pyrite, Malachite, Azurite, Copper** minerals, **Quartz** crystals, etc., are frequently found in the waste gangue. ⑤ the Potter-Cramer Mine—**Ajoite, Wickenburgite, Fluorite, Willemite** (all fluorescent).

MOHAVE COUNTY

ALAMO CROSSING, of the Bill Williams R. about 40 mi. N of US 60 at Wenden (Yuma Co.) via typical desert road. The entire region between Wenden and Kingman is one of extreme heat in summer, dangerously rough dirt roads, aridity, and few inhabitants; be prepared to handle all emergencies alone. Be certain to leave word of destination and time expected back. A fascinating region but one of most hostile in the desert Southwest.

① Many area old mines, like Little Kimball Mine 5 mi. back of Alamo Crossing (with its Jim Rogers abandoned mill in Alamo) —**Copper** minerals, **Gold, agate, chalcedony, jasper** and **Quartz** crystals; ② sands and gravels along the bed of the Bill Williams R.—**Celestite** and **Gypsum**; ③ N 12.4 mi., bear W on rough dirt rd. 4½ mi. to second jct. (Sally Ann), then 0.7 mi. to the head of Mississippi Wash, park at old homestead, and walk ½ mi. into the wash to huge natural cauldron—Indian petroglyphs, **agate, jasp-agate, jasper** and **petrified wood** in general area;

④ N 16 mi., Rawhide. This extraordinarily rich gold camp (it never became either a mining camp or a town) straddled the old Owl Hoot outlaw trail and was a stop-over where desperadoes could dig out raw gold from Rawhide Butte by the literal bucketful to replenish their finances between crimes. No legitimate prospector, miner, or lawman ever penetrated to Rawhide; hence no town grew up around the rhyolite butte. (a) Area around base of Rawhide Butte (which towers over the campsite), large deposit—gem **jasper, jasp-agate** containing specular Hematite; (b) area single-jack prospects—**Copper, Gold** and **Silver**; (c) Rawhide Butte (now a shell of rhyolite) —**Gold, Copper** and **Copper-Silver** minerals; (d) E, SE, and S toward Alamo, area 20 mi. N to S and several miles wide, as nodules and boulders literally covering the surface of the ground—**Manganese** (Pyrolusite, Psilomelane, etc.). The main deposit is a 25 mi. sq. U formation of the richest manganese (and largest) in America, between the Artillery Mts. and the Rawhide Mts. The richest deposits face the NE sides. Mostly on public lands, the manganese can be picked up anywhere and trucked to the smelter, but transportation costs about equal the per-ton value. (e) N 5 mi., a US Bureau of Mines operation (trucked out to Congress Jct.) —**Manganese** minerals.

BULLHEAD CITY, S along Rte. 95, in gravels of the Colorado R. terrace on both sides of hwy.—**agate, chalcedony** (pebble roses), **jasper**, fossil trilobites and **petrified wood** (cycad, ironwood, palm, etc.).

Arizona

HACKBERRY, S 30 mi., in Aquarius Cliffs, pegmatites—**Gadolinite**.

HOOVER DAM: ① area downstream from mouth of the Grand Canyon, in sands and gravels—fine placer **Gold**, with coarser **Gold** in the more elevated river bars; ② Lake Meade area, along E side of the Colorado R. near its exit (best locality 3 mi. SSE of Hoover Dam)—**agate** and **chalcedony**; ③ S 4 mi., in veins—**Pyrolusite**.

KINGMAN: ① area mines and, in N part of Co. in sand dunes—**Gadolinite**; ② Emerald Isle Mines, as good colored material—**Chrysocolla** and **Tenorite**; ③ SW 3 mi. and ½ mi. NE of McConnico, at old BiMetal Gold Mine, placers—**Gold**; ④ N 5 air mi., at Kingman Feldspar Mine—**Allanite**, **Microcline** and **Quartz** crystals; ⑤ NW 15 mi.: (a) Chloride and Mineral Park Districts, notably the Minnesota-Connor, Windy Point, and Queen Bee mines—**Arsenopyrite** and **Dufrenoyite**; (b) Distaff and other nearby mines—native **Silver** and **Silver** minerals; (c) Golden Gem and Vanderbilt mines—**Galena**, **Pyrite**, **Sphalerite** and **Stibnite**; (d) on SW side of the Cerbat Range (extending SE to Mineral Park)—**kaolin** minerals and **Turquoise**; ⑥ S 22½ mi. to within 6 mi. of Goldroad (ghost town), near Sitgreaves or Meadow Cr. Pass, area—**agate** (fire, grape), **chalcedony roses** (to 5" dia.) and **jasper**; ⑦ SSE, in the Hualpai Mts., the Boriana Mine—**Scheelite** crystals; ⑧ S 55 mi., in the Aquarius Range: (a) area pegmatite outcrops—native **Bismuth**, **Bismuthinite** and **Gadolinite**; (b) W side of Aquarius Range, the Rare Metals Pegmatite Mine—**Beryl**, **Bismuth**, **Euxenite**, **Gadolinite** and **Yttrotantalite**; (c) 2 mi. S of the Rare Metals mine, in two small pegmatites mined to shallow depths—**Beryl** and **Microcline** feldspar; (d) 2 mi. SW of the Rare metals mine, in pegmatites—**Allanite** (blades several inches long), **Beryl**, **Columbite**, **Monazite** and **Xenotime** (reddish crystals to 1" dia.); ⑨ SE 60 mi., the Mammoth Claim—**satin spar**.

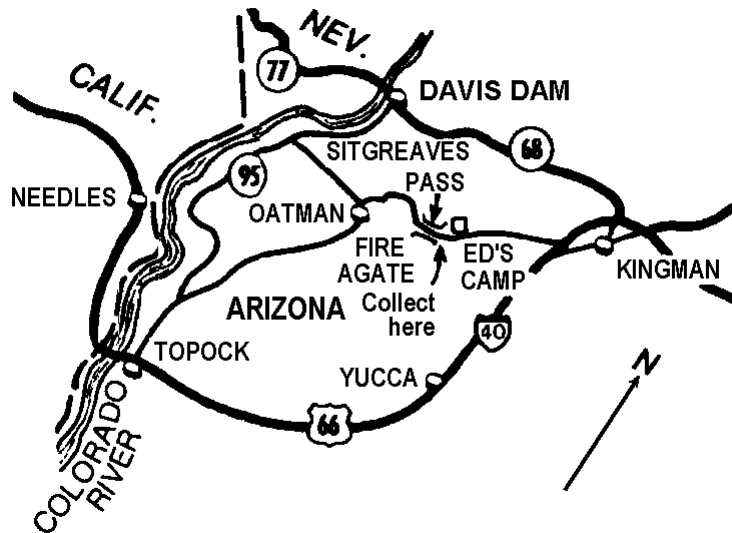
LAKE MEADE-LAKE MOHAVE, area Colorado R. gravels, E side alluvial terraces and foothills all the way S along W border of Co.—**agate**, **chalcedony** (pebbles and roses), **jasper** and **petrified wood** (cycad, ironwood, palm, etc.).

LITTLEFIELD: ① area basic dikes—**Pentlandite**, with **Chalcopyrite** and **Pyrrhotite**; ② Virgin Valley (across extreme NW corner of Co.): (a) badlands near Nevada border, deposits—**Gypsum** and **Halite**; (b) Quail Canyon and South Mt., as thick beds—**Gypsum**; ③ Chin Lee Valley, W 6 mi. and 2 to 4 mi. S of the Utah border, area—**Gadolinite** and **Peridot**.

MINERAL PARK (rejuvenated ghost town): ① E 1 mi., at Ithaca Peak, ② 1 mi. S of Ithaca Peak, at Aztec Mt.; ③ at end of range of hills 0.3 mi. SSW of Mineral Park; ④ on mt. 0.8 mi. SSE of town—**kaolin** minerals and **Turquoise**; ⑤ old mine dumps in and about town—**Copper** minerals. (Such famous mines as the keystone, Gold Star, Metallic, Accident, and Quick Relief are, or have been, overrun by the Duval Sulphur & Potash Co. in its exploration and exploitation of an enormous deposit of 1% copper ore containing traces of Molybdenum and Silver. Initial discoveries of ore ran about \$8 per pound of ore in silver alone.)

OATMAN: ① area mines—**Gold**. (The discoverer, John Moss, located the Silver Creek Vein in 1863. Legend has it that he extracted \$240,000 in Gold from a pit 10 ft. on a side and 10 ft. deep. Mining in the Oatman district continued up to World War II.) ② Black Mts., N part of district, as white to pale green bands or a lining of cavities—**Fluorite**; ③ NW 5 mi. and 6 mi. downstream from US 66 in valley of Silver Cr., placers—**Gold**; ④ take Kingman rd. NE 5.4 mi. to a curve in Meadow Creek Canyon, some on slope above canyon but best material is just below Hwy. at curve and to N of Hwy. on butes and ravines—**agate**, **chalcedony roses** and **nodules**; ⑤ Sitgreaves Pass at Ed's Camp (Fee)—**Fire agate**.

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PIERCE FERRY (accessible from US 93, 12 mi. N of the turnoff to Chloride, or 54 mi. SW of Boulder City, NV: ① S 9 mi. from the Colorado R. in T. 28 & 29 N, R. 17 & 18 W, placer sands—**Gold**; ② S 8 mi. from the Colorado R., in T. 29 & 30 N, R. 17 W, the King Tut Mine, placer—**Gold**.

PIPE SPRINGS NATIONAL MONUMENT. For area, see Fredonia in Coconino Co., as access point.

TOPOCK: ① area extending to visible low hills—gem agate, chalcedony and jasper; ② E 2½ mi. toward Oatman, on E side of rd. in gravels—**quartz gemstones**; ③ N 4½ mi. on rd. to Oatman, along E side of rd. —**quartz gemstones**; ④ N 5 mi., area of low hills on W extending for 2 mi.—gem **agate**; ⑤ old Oatman hwy. over Black Mt. via Sitgreaves Pass, area along both sides of hwy.—**agate, chalcedony roses, jasp-agate, jasper, petrified wood and chert** (containing fossil corals and crinoidal stems); ⑥ N 7½ mi., area—**agate, chalcedony and jasper**; ⑦ SE 18 mi. Gold Wing district (SW part of Co., in foothills of the Chemhuevois or Mohave mts.), placer—**Gold**.

WIKIUP: ① SE 19 mi., to Burro Cr. crossing by US 93: (a) area under bridge and both sides of hwy., best field in state—banded **agate, chalcedony, opalite, jasper** and gem **chert**; (b) 2 mi. S of bridge, broad surrounding area—**Apache tears**; (c) 6½ mi. NW of bridge—**agate, amethystine, chalcedony, chalcedony roses, chert, jasper** and **obsidian**; ② S about 10 mi., turn E on rd. to Bogle Cattle Company, follow 14 mi. (4 mi. beyond ranch turnoff), keeping right, extensive field extending another 2 mi. to old Burro Cr. crossing—**agate** (blue, fluorescent); ③ N 22 mi., Big Sandy R., in gravels—**onyx**.

NAVAJO COUNTY

AREA: Most of this county, especially southeast of Holbrook, is noted for its gem quality **agatized wood** that includes *Araucarioxylon arizonicum*, *Podozamites arizonica* (cycad type), *Woodworthia arizonica*, plus some 35 other genera and species of flora; including ferns, fungi, cycads, ginkgo trees, and horsetail rushes. The larger agitized tree trunks often contain cavities filled with gem **Amethyst, rock crystal**, etc.

FORT APACHE INDIAN RESERVATION, area outcrops, as large platy crystals—**Selenite**.



HOLBROOK, S 22 mi. from US 66, the Petrified Forest National Monument (no collecting permitted), area outside boundaries, abundant—gem **agatized wood**. (2 fee collecting locations are at Dobell diggings, 19 mi. from Holbrook on Hwy. 180 past the National Park entrance to sign indicating ranch road.

MONUMENT VALLEY (N of Keyenta to Mexican Hat, UT), regional Shinarump sandstones—**Carnotite**, **fossil wood** (often rich in **Uranium**, **Vanadium** and **Radium**). This is part of the Navaho Indian Reservation. During the 1950's many small **Uranium** mines were operated by the Navahos. **Carnotite** ore occurs in lenses outcropping wherever the Morrison formation appears.

WINSLOW, area deposits—**Gypsum**.

PIMA COUNTY

AREA, in lining in veri-colored rock from the Cimarron Mts.—**Huntite** (fluorescent).

AJO: ① area hills surrounding town—**agate**, **chalcedony**, **jasper** and **silicified ironwood**; ② area copper mines, including the mammoth open pit in town, one of the largest copper deposits in America—**Bornite**, **Chalcocite**, **Chalcopyrite**, **Hematite**, **Magnetite**, **Specularite**, **Sphalerite** and **Tennantite**; these minerals occur as grains and veinlets in a gangue of **Quartz**, **Orthoclase**, Albitic **Plagioclase**, **Sericite** and **Chlorite**; ③ New Cornelia open-pit mine (get permission) —**Ajoite**, gem **Shattuckite**, and in ore body on the S side as bordering narrow band—**Chalcocite**; ④ Hwy. 85 N for 20 mi., then right on road 7½ mi. to far end of Black Mesa—**chalcedony roses**.

ARIVACA, LAS GUIJAS (about 50 mi. SSW of Tucson): ① area mines—**Azurite**, **Bornite**, **Chalcopyrite**, **Covellite**, **Cuprite**, native **Copper**, **Tetrahedrite** and some

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Gold; ② W, in Cerro Colorado Mts., many regional mines and prospects—**Iodyrite** (horn silver), **Stromeyerite**, **Tetrahedrite** and native **Silver**.

CORTARO, SW on Cortaro Rd. to Picture Rock Rd., W to Wade Rd., then N to jct. with Silver Bell Rd., turn W and pass gas line, first rd. S to Little Peak (Safford Peak due W), park, area—gem **agate** (banded, moss, plume).

HELVITIA-ROSEMONT DISTRICT: ① Leader, Ridely, Pauline mines, as well as many prospects in Madera and Providencia canyons—**Molybdenite**, **Gold**, **Copper** minerals and **Tungsten**; ② Cuprite district, Cuprite Mine—**Molybdenite** in **Chalcopyrite** ore; ③ Greaterville district at E foot of Santa Rita Mts. 8½ mi. NW of Sonoita, placers—**Gold**.

QUIJOTOA (Pima Indian village about 70 mi. W. of Tucson on Rte. 86), the Quijotoa Mts., area about 100 sq. mi., placers—**Gold**.

REDINGTON, SW, on N slope of Alder Canyon in Santa Catalina Mts., from near the USFS boundary to within a few miles of San Pedro R., placers—**Gold** (coarse, flat, ragged).

ROBLES Jct. (25 mi. W of Tucson on Rte. 86), SW, in the Baboquivari Mts., the Gold Bullion Mine, in quartz veins—**Gold** and **Molybdenite**.

SILVER BELL (District): ① in old mine working—**Calcite** (fluorescent), **Chalcanthite**, **Copper**, **Cuprogoslarite**, **Fluorite** (fluorescent), **Silver**, **Willemite** (fluorescent); ② El Tiro Mine—**Pisanite**.

TUCSON: ① Tucson Mts., old Yuma Mine, area 1 mi. S on a prospect, as crystals—**Willemite**; ② NW, in the Sierrita Mts.: (a) Mineral Hill district, as efflorescence on walls of old mines—**Melanterite**, also **Copper** minerals and **Pyrite**; (b) Neptune property, as veins from a few inches to 2 ft. wide—**Fluorite**; ③ W, between the Banner Pima mines and the edge of the Papago Indian Reservation, the Mission Mine—**Copper** minerals; ④ SW about 30 mi., at Papago or Aguajito (S part of Co.) in the Papago Mining District, along Ash Cr. on the Sunshine-Sunrise group of claims in Pescola Canyon, placers—**Gold**; ⑤ SW 33 mi. alongside the Banner and Pima mines, the Esperanze Mine (once called the New Year's Eve Mine), rich ores—**Copper** and **Molybdenum**. (These are not old mines; ore bodies were discovered entirely by geophysical methods, since no indications of subsurface mineralizations were observable on the surface.)

TWIN BUTTES (SSW of Tucson and SW of Sahuarite about 7 mi. by good graded rd. or reached via Mission Rd. to San Xavier, 23 mi. from Tucson): ① many area old mine dumps; ② Glance, Copper King, Copper Queen mines—**Azurite**, **Chalcocite**, **Chrysocolla**, **Malachite**, many **fluorescent minerals** (night prospecting of surface), **Calcite**, **Covellite**, **Cuprite**, **Pyrite**, **spar**, etc. The famed Copper King Mine on the E butte is connected at the 700 ft. level underground with the equally famed Copper Queen Mine on the W butte. These two mines and the San Xavier Mine just N produced \$25,387,000 in Copper, Lead and Zinc. Other collectable minerals include **Marcasite** as alteration from **Pyrrhotite** and native **Copper**. The area mines were all developed in the zone of oxidation veins, with progressive enrichment of ores with increasing depth. Dumps all hold nice specimens.

PINAL COUNTY

CASA GRANDE, S past Chuischu 12 mi. E to Wild Horse pass—**agate** and **jasper**.

COPPER CREEK DISTRICT (SE corner of Co., 8 mi. E of Mammoth on Rte. 77), then E into Galiuro Mts. in Graham Co.: ① Blue Bird Mine—**Stromeyerite**, with **Tennantite** in lower levels; ② Copper Giant and Old Reliable mines, as coatings on walls of drifts and fractures—**Chalcanthite**; ③ Childs-Aldwinkle Mine, as fine crystallization—**Molybdenite**, with **Atacamite**, **Enargite** and **Olivenite**. (**Rhenium** occurs here in the highest known percentages as an associate of Molybdenum.)

FLORENCE: ① N side of RR tracks go E through underpass to flag stop of Price (marker 969), turn N for 9 mi., keeping right, to Martinez Silver Bell Mine—**chalcedony**

Arizona

roses, **Copper** minerals, **Galena** and some **geodes**; ② head of Martinez Canyon to the NE—**agate** and **jasper**; ③ about 32 mi. SW on US 80, 89 (halfway to Tucson), area E of hwy. in basalts, as radiating fibrous amygdules—**Thomsonite**.

MAMMOTH, the Mammoth Mine, on dumps—**Anglesite**, **Caledonite**, **Cerussite** (as magnificent twinned and reticulated crystal aggregates), **Crocoite**, **Diopside**, **Leadhillite**, **Linarite**, **Malachite**, **Phosgenite** (as slender prismatic crystals with **Diaboleite** on the 400 ft. level of the Collins vein), **Tenorite** (as coal black nodules surrounded by thin shells of **Chrysocolla**), **Vanadinite**, **Willemite** (fluorescent) and **Wulfenite** (crystals encrusted with bright orange **Ecdemite**).

RAY (12 mi. S of Superior on Rte. 177, then E 3 mi.), old Ray shaft, as sparking ruby red aggregates—**Cuprite** and **Chalcotrichite**.

SUPERIOR: ① area perlite mines to SW—**Apache tears**; ② Belmont and Magma mines—**Copper** minerals, **Pyrite** and **Sphalerite**; ③ Silver King and other area silver mines—**Silver** (wire also fine crystallization), **Stromeyerite** (most important ore mineral) and **Sphalerite**; ④ Ajax Mine—**Calcite** (fluorescent)

PINAL-MARICOPA COUNTIES

APACHE JUNCTION (Pinal Co.), NE into Maricopa Co. 15 mi. along the Apache Trail (Rte. 88) to : ① first glimpse of Canyon Lake, back up and park at cattle loading corral, all area along both sides of hwy.—**chalcedony roses** and dark brown **geodes**; ② Port of Phoenix, (see Roosevelt Dam, Maricopa, Co.); ③ Tortilla Flats, and area side canyons—**chalcedony roses** and **Quartz** crystals.

FLORENCE JUNCTION (Pinal Co.), take blacktop rd. W of town, go N & W 5 mi., then N on faint road past corral—**carnelian** and **chalcedony roses**.

SANTA CRUZ COUNTY

DUQUESNE (ENE OF Nogales): ① very many area mines, both active and inactive, on dumps—**Chalcocite**, **Arsenic** minerals, **Chalcopyrite**, **Diopside**, **Epidote**, **Galena**, **Gedrite**, **Hedenbergite**, **Pyrite**, **Pyrrhotite**, **Sphalerite**, **Garnets**, **Tourmalines**, **Tremolite** and **Wollastonite**; ② Westinghouse property—**Cerrusite**, **Anglesite**, **Chrysocolla**, **Cuprite**, **Smithsonite** and **Sphalerite** (as magnificent crystal groups).

HARSHAW (10 mi. S of Patagonia): ① Alta Mine, as red gangue—**Fluorite**, with **Embolite** and **Pyragyrite**; ② between Sonoita Cr. on NW and Alum Canyon on SW, in Quaternary placer gravels—**Gold**.

MOWRY DISTRICT, on E slope of the Patagonia Mts. 15 mi. S of Patagonia and 6 mi. N of Mexico, gravels of Mowry Wash and its tributaries, placers—**Gold**.

NOGALES (District): ① N 6 mi., in Guebabi Canyon—**Gold**; ② E, on W side of Patagonia Mts., the Dura Mine—**Stibnite**.

PATAGONIA DISTRICT: many regional rich old mines: ① Double Standard Mine, as reniform masses attached to walls of dolomitic limestone pockets—**Arsenic**; ② Flux Mine—**Cerussite**, **Massicot** and **Minium**; ③ Santo Nino and 3-R mines, as striated and twinned crystals or aggregates to 8 " dia.—**Pyrite** associated with **Molybdenite**; ④ Kansas Mine—**Galena**, **Garnets**, **Pyrite** and **Sphalerite**; ⑤ Trench Mine—**Alabandite**, **Galena**, **Rhodochrosite** and **Sphalerite**.

RUBY (with Arivaca in Pima, Co.) DISTRICT: ① with nearby Oro Blanco, a very old mining district, area mine dumps—**copper minerals** and **Gold**; ② area between Ruby and Twin Buttes, both sides of the roads—**fluorescent minerals** and **pink agate**; ③ Montana Mine—**Galena** and **Sphalerite**. (throughout Santa Cruz Co. and adjoining Pima Co., the black-light prospecting at night will reveal **Tungsten** minerals scattered everywhere, sometimes in commercial quantities.)

A Location Guide for Rock Hounds in the United States

SALERO, SW $2\frac{1}{4}$ mi. to Tiniall district 1 mi. S of Mt. Allen at SW base of Grosvenor Hills, on each side of the township line in SW $\frac{1}{4}$ Sec. 35, placers—**Gold**.

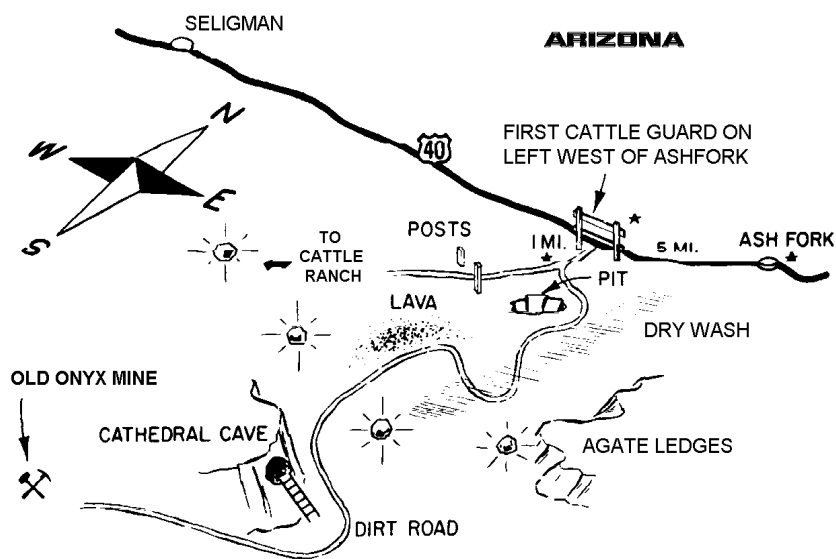
TUBAC, ENE into national forest, the Compadre Mine—**Copper, Lead, Silver & Zinc** minerals.

WASHINGTON DISTRICT: ① area mines, Duquesne; ② NW 3 mi., the Four Metals Mine; and ③ 2 mi. W of the Four Metals at the Proto Mine—**Chalcocite, Chalcopyrite and Pyrite** with traces of **Gold, Lead and Silver**. In this Patagonia Mts. region some 17 mi. E of US 89 lie more than 40 mineral rich mines on the dumps of which occur a wide variety of colorful ore minerals and crystals. ④ Red Mt. Mine—(see Four Metals Mine); ⑤ Wrightson district: (a) American Boy Mine, as fine crystals—**Tennantite and Tetrahedrite**; (b) Happy Jack Mine—**Uraninite**.

YAVAPAI COUNTY

AREA, the Midnight Owl Mine, in pegmatite—**Eucryptite** (fluorescent).

ASH FORK: ① I-40 W for 5 mi., then Left on dirt rd. at first cattle guard on left side of road for mile, then take Left fork across a wash, in wash—**agate**; ② along roadside where rd. passes under ledges from which agate is weathering; ③ Cathedral Cave, about 500 ft. from cave entrance—**agate** (white with colored spots); ④ go about $\frac{3}{4}$ mile past cave to abandoned mine—**onyx**.



BAGDAD: ① at crossroads with Hwy. 97, turn N at a tavern for 3 mi. to cattle loader and fence, prospect along fence and in adjoining areas toward E—gem **jasper**; ② SE, along banks of Santa Maria R. and in sandbars—**agate** (blue, green) and **agatized cactus wood**; ③ N to Copper Company openpit mine (get permission), follow rd. through pit to view of power poles (4 mi. N of town), area around poles in all directions—gem **jasper, crystal conglomerate** and **Quartz** crystals; ④ area of Eureka District (45 mi. W of Prescott), in pegmatite outcrops—**Bismuthinite**.

BLACK CANYON CITY: ① area mines—**Silver** with **Proustite**; ② Howard, several area placers, especially 1 mi. below—**Gold**.

Arizona

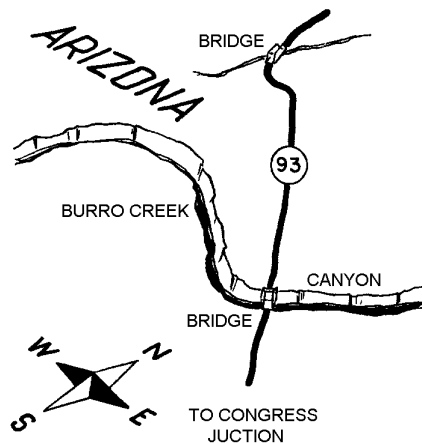
BUMBLE BEE (area), Mile Port 252 on Hwy. 79 (52½ mi. N of Phoenix), Sunset Point Lookout, E on Bloody Basin Rd. to old Piedmont Mine—**Copper** minerals.

CAMP VERDE, SW 3 mi., in salt deposits—**Halite** (fluorescent), **Glauberite**, **Gypsum**, **Mirabilite** and **Thenardite**.

CASTLE HOT SPRINGS: ① area around the resort 24 mi. NE of Morristown (Maricopa Co.) —**agate** (blue, gray and fortification), **agate nodules**, **chalcedony roses**, drusy quartz **geodes**, **Dumortierite**, **jasp-agate**, **Manganese** in **quartzite**, **Quartz** crystals (many with inclusions, some rose colored), **Rose Quartz**, **Pyrite**, **Pyrolusite** and black **Tourmaline**; ② Castle Creek mining district, the Swallow Mine—**Bismuthinite** altering to **Bismite**; ③ 4 mi. N, the Champie Ranch, area—**agate** (blue, gray and fortification), **Quartz** crystals (many with inclusions), **rhyolite nodules** (**Opal** centers), etc.

CHINO VALLEY, area—**agate**, **chalcedony** and **jasper**.

CONGRESS JUNCTION: ① N 2 mi. on US 89, turn SE on dirt rd. for 4½ mi. to big wash, cross and for next ¼ mi. on flats above a steep hill—**Fluorite**, **Garnets** and **Pyrite**; ② E another 1½ mi., old mining camp of Stanton: (a) area—**Fluorite**, **Garnets**, **Gold** and **Pyrite**; (b) Rich Hill (flat topped mt. above Stanton), on or in surface debris—**Gold** nuggets; ③ another 2 mi. S, to old camp of Octave—**Gold**; ④ N 3 mi., at old Congress Mine (private property) —**Gold** and **Pyrite**; ⑤ NW, to Date Cr., area—**agate**, **Garnet**, **jasper**, **Limonite** cubes and **Quartz** crystals; ⑥ E 6 to 8 air mi. and just NW of Octave, the S of marker, on hillside above dry wash—**Fluorite**, **Garnets** and **Pyrite**. ⑦ Under bridge of Burro Creek, 47 mi. NW on Hwy. 93—**agate** (pink); ⑧ a few miles NE of crossing of Signal Road at Burro Creek, area deposit—**agate** (purple); ⑨ N of bridge 5½ mi. and beyond another bridge, a lava and limestone ridge meet—**obsidian**, **obsidian nodules** and banded **agate**; ⑩ on Gypsy Ranch, Hwy. 93 N to ranch sign, turn N 2 mi. to diggings along road—**Quartz** crystals.



CONSTELLATION, area mines—**Copper** minerals, **Gold**, **Pyrite**, **Amethyst**, **jasper** and **Quartz** crystals.

CORDES (Jct. 61 mi. N of Phoenix): ① NW to Mayer on Hwy. 69, area across Big Bug Cr.—**Arizona** or *paisley shawl* **onyx**; ② Poland Jct., W past power station, take right (upper) rd. in canyon to old mine dumps—**Marcasite**, etc.; ③ in stream gravels along the left (lower) rd., placers—**Gold**.

DEWEY (83 mi. N of Phoenix on hwy. to Prescott), just E of Prescott turn S for 8 mi. to ghost town of Walker—**Pyrite**.

HUMBOLDT, POLAND, MAYER (E and S of Prescott on Hwy. 69): ① area mines of the Big Bug district, the Mayer, McCabe and Humboldt placers—**Gold**; ② Boggs Mine, as crystallized material—**Bournonite** in **Calcite** masses; ③ Iron Queen Mine, as small

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colloform masses in partly oxidized ore—**Marcasite**; ④ Bradshaw City: (a) area mines—**Tetradymite**, associated with **Pyrite** in **Quartz**; (b) Minnehaha area and Montgomery Mine, in quartz veins—**Gold**, **Pyrite** and **Tetradymite**; ⑤ Lynx Cr. (central part of Co.): (a) Malley Hill Mine, and (b) Tuscumbia Mine—**Stibnite**; ⑥ Peck district, the Peck Mine, as main ore mineral—**Bromyrite**; ⑦ Turkey Cr. district—**Stibnite**; ⑧ at a small prospect, Sec.17, T. 12 N., R. 2 W.—**Adamite** (pale green crystals clusters in **Quartz**), **Alloclasite**.

JEROME: ① area mines—**copper minerals**; ② N 9 mi. toward Perkinsville, many fields along both sides of rd.—gem **agate** (various colors) and **jasper**.

KIRKLAND, SSE 9 mi., in Placerite, French, and Cherry gulches, many placer mines—**Gold**.

PEEPLER VALLEY, W, along Model Cr., placers—**Gold**.

PERKINSVILLE, adjoining areas—gem **chert** (locally called pink agate)

PRESCOTT: ① area mines—**Copper** minerals, **Gold** and **Pyrite**; ② Columbia district, area black sands—**Gold** and **Platinum**; ③ S 4 to 6 mi., placers—**Gold**; ④ S, to headwaters of Hassayampa R., along entire course of river S from the 7,000 ft. Bradshaw Mts. to the Co., line 2 mi. N of Wickenburg (Maricopa Co.), many productive mines and placers—**Gold**; ⑤ NE 43 mi. via Jerome and Pine Flat on US 89A, to Sycamore Canyon (30 mi. S of Williams in Coconino Co.), area breaks and side canyons—**agate**, **chalcedony**, **jasper** and **petrified wood**.

ROCK SPRINGS (46 mi. N of Phoenix): ① Mile Port 246, turnoff to Maggie Mine, placers—**Gold**; ② Mile Post 249: (a) turn W to Cleator and old Bumble Bee hwy., S ¼ mi. from store to French Lilie Mine, around transformer area —**Andalusite** crystals; (b) beyond Cleator on old hwy. to Middletown, to old Crown King Mine (ghost camp), area—black **Tourmaline**.

SEVEN SPRINGS (on Maricopa Co. line N of Cave Creek): ① N 1 mi. to Camp Cr. campground area—red **jasper**; ② 2 mi. farther W, old onyx mine—**onyx**; ③ N 9 mi. (6 mi. N of onyx mine turnoff), a dim S trending rd. across a dry wash to old buildings of the Arizona Agate Mine, on N slope of hill in old diggings and all area on both sides of rd.—gem **agate**; ④ N 19 mi., both sides of road—gem red **jasper**.

SKULL VALLEY: ① E 6.7 mi. on dirt rd. just S of RR into old mining district, many collecting localities: (a) surface workings—**Azurite**, **Cuprite**, **Malachite**, etc.; (b) mine dumps—**Chalcopryite**, **Ferrimolybdite**, **Molybdenite**, **Pyrite**, etc.; ② NE on rd. to Prescott, in Copper Basin District: (a) Copper Basin Wash, N between Skull Valley and the Sierra Prieta, area placers—**Gold**; (b) Mercury, Cinnabar Queen, Zero Hour, and Shylock mines—**Cinnabar**.

WALKER (7 mi. SE of Prescott): ① Robinson property—**Stibnite**; ② along creek to its junction with Agua Fria Cr. 13 mi. E of Prescott, placers—**Gold**.

YUMA COUNTY

AREA: Wherever metamorphosed limestones outcrop, look for **Idocrase** (**vesuvianite**), rather abundant.

BLAISDALE, N 16 mi. on US 95 to turnoff to Mattinez Lake: ① NW from jct. about 4 mi., area of petrified forest (shown on most maps) —**petrified cycads**, **ironwood**, **palm**, etc.; ② N 19 mi., turn W at old wind mill toward Yuma Test Station (bombing range area, permission required for week-end prospecting), all along rd. into the restricted area, especially around a low knoll—**petrified cycads**, **ironwood**, **palm**, etc., plus **agate**, **jasper** (yellow, gemmy), **sand spikes**. (This is about center of a 100 mi. long collecting region on the terraces and benches above the Colorado R.)

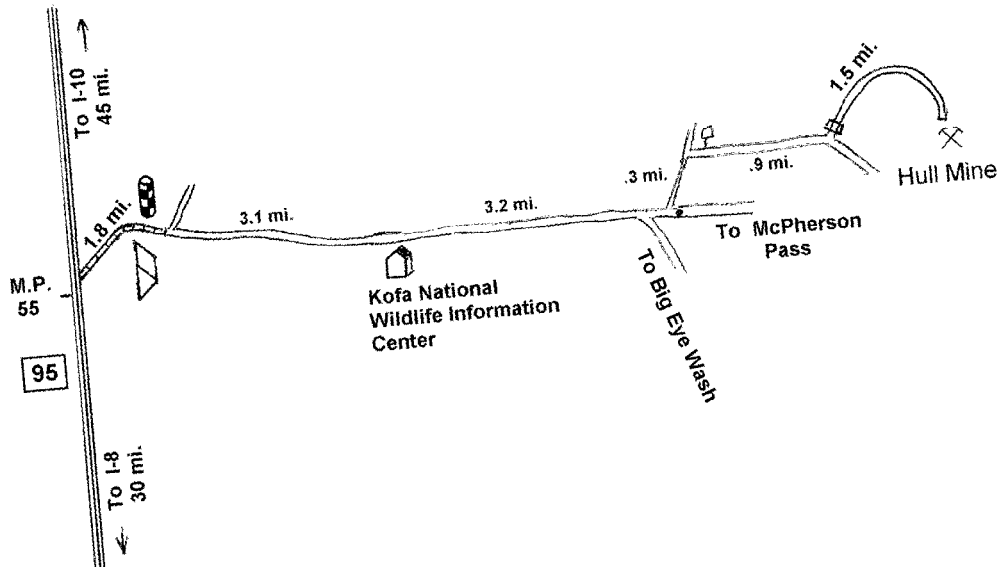
BOUSE: ① area old mines, in deep-red rhyolite, as free particles—**Gold** (specimen value only); ② E, across RR tracks, at Bouse Butte, some area veining on N and E

Arizona

sides—**seam agate** (green, lavender, moss pink [really a jasper]); ③ N about 3 mi., area—**variegated agate**.

BRENDA (service sta.), E 1.2 mi., area adjoining S side of hwy. extending in broad arc to the S, abundant—**jasper** (gemmy, red, mossy, some slightly translucent).

CASTLE DOME DISTRICT (38 mi. NE of Yuma via US 95 and dirt rd.): ① area mines—**Barite**, **Fluorite** (greenish, purple, rose-colored, crystals and cleavage masses to several in. dia.), **Galena**, **Witherite** and **Wulfenite**; ② Big Eye Mine—**Lead** and **Silver** minerals; ③ E and S of the Big Eye, area placers—**Gold**; ④ Hull Mine, from M.P. 55 NE 1.8 mi. on paved rd. to old water tower and hanger, then on un-paved rd. straight for 3.1 mi. past Kofa National Wildlife Information Center, continue 3.2 mi. to fork go straight 0.1 mile to next fork at post, go left for 0.3 mi., follow faint road to right past sign “Castle Dome & Flora Temple Mines closed” for 0.9 mi. to fork in rd., take left for through broken yellow fence around hill for 1.5 mi. past junk to adit on NE side of hill—**Calcite**, **Fluorite**, **Galena**, **Wulfenite**, **Vanadinite** (see map next page); ⑤ Castle Dome Mts., area of these *Middle Mountains*, scattered localities—**geodes**, **quartz gemstones**, **Opal**, **opalite**, and **Turquoise**; ⑥ W of US 95 jct. to the Castle Dome district, 1.9 mi. on dirt rd., take N fork to its end at 2½ miles, area—**agate**, **jasper**, and **geodes** (filled with fortification agate, banded agate, chalcedony, or quartz crystals).



Hull Mine

CIBOLA (due S of Blythe, CA, on E side of Colorado R.), reached 22½ mi. S of Quartzite via US 95, jct. with W trending rd.: ① W 4.2 mi. to Cibola forks, take S fork 0.3 mi. to second rd. fork beside steep butte, all area surfaces—high grade **opalite**; ② continue W to ghost town of Cibola (19 people in 1920): (a) area draws and washes of the river terrace—**agate**, **chalcedony**, **jasp-agate**, **jasper**, **chert** and **petrified wood** (many kinds); (b) in river gravels 7 mi. N of town—**chalcedony** and **petrified wood**; (c) area old mine dumps—**Gold** and **Pyrite**.

DOMES, E, in Muggins Mts., S and central portions of T. 8 & 9 S, R 8, 9 & 10 W, especially in Burro Canyon, dry placers—**Gold**.

GILA CITY (about 20 mi. E of Yuma at N end of Gila Mts. and 1½ mi. W of present site of Dome near the mouth of Monitor Gulch), area placers—**Gold**. The whole area between US 60, 70 and US 80 east of the Colorado R. to the Maricopa Co. line (a region of nearly 5,000 sq. mi.) contains hundreds of old mines and prospects, mostly worked for **Gold**

A Location Guide for Rock Hounds in the United States

but other minerals usually were also present. The region is one of the hottest, most arid deserts in the Southwest, with prospecting feasible only during the pleasant winter months.

HOPE, W 3 mi. on US 60, 70 to Shell gas station, then S on rd. just W of station for 27 mi., all area to top of hill $\frac{1}{2}$ mi. S (to rock monument), broad locality, especially to E—gem **agate**.

LAGUNA: ① Laguna Dam, area at E end and about 10 mi. NE of Yuma; ② Las Flores area; ③ McPhaul area, local placers—**Gold**; ④ N of the Gila R. and the Gila Mts., In R 21 & 22 W, embracing the S, SE, and SW portions of the Laguna or San Pablo Mts., area placer sands—**Gold**.

QUARTZITE: ① area: (a) nearby mines exposing schists—**Kyanite**, **Dumortierite** and **Andalusite**; (b) Big Bertha Extension mine—**Zunyite** (fluorescent); ② SE, on top of highest peak visible from town (very long hike), hard rock mine—**Gold**; ③ Plomosa district (including E and W margins of the La Posa Plain and extending in all directions from the heart of town), dry placers—**Gold**: (a) La Cholla, in area 4 to 5 mi. long bordering E foot of the Dome Rock Mts. S of I-10, placer sands at bedrock level, abundant—**Gold**; (b) Middle Camp, just N of the Oro Fino placers, in rich seams of gravel on bedrock—**Gold**; (c) Oro Fino, at E foot of the Dome Rock Mts., in vicinity of I-10, dry placers—**Gold**; (d) Plomosa (5 mi. SE of Quartzite), at E edge of the La Posa placers—**Gold**; ④ W 9 mi. to ruins of La Paz (S of the Colorado R. Indian Reservation), along the foot of the Dome Rock Mts. and 6 mi. E of the Colorado R., placers—**Gold**; ⑤ Dome Rock Mts.: (a) area mines—**Cinnabar**, **Magnetite**, **Siderite**, **Stibiconite** (as radiating blades of **Stibnite** partly altered to **Cervantite** and **Stibiconite**), **Tourmaline**; (b) Colonial property—**Cinnabar**, thinly coated with **Metacinnabar**; (c) Don Walsh prospect, as crystals to 1" dia.—**Pyrite**; ⑥ E 8.3 mi. turn S onto old mine rd., campsite about 4 mi. from pavement, are all along way—**agate**, **chalcedony**, **jasper**, etc.; ⑦ S 9 mi. on US 95: (a) E on poor dirt rd. $7\frac{1}{2}$ mi. the Crystal Peak area, campsite, broad surrounding area to N and NE—rock **crystal**, **Limonite** cubes. (This is a noted location for chatoyant quartz crystals, many with inclusions, to large size, but has been pretty well cleaned out.) (b) E 9 to 15 mi. into mts., all along the rd., both sides, in whitish clay exposures—rock **crystals**, **Limonite** cubes and quartzite; ⑧ S 19.2 mi. (4 mi. N of Weaver Pass side rd. to Cibola, turn E on dirt rd. 5.4 mi. past turnoffs to Palm Canyon, Kofa Queen, and Kofa Game Refuge, to good campsite: (a) SW $\frac{1}{2}$ mi., as beds—**geodes** (containing white botryoidal chalcedony or quartz crystals, to 12" dia.); (b) area old mines, such as the King of Arizona, Kofa Queen, North Star, etc.—**Copper**, **Lead**, **Silver** and **Gold**; (c) all regional draws, washes, hillsides, etc.—**agate**, **chalcedony** (nodules, roses), **jasper**, **geodes**, **petrified wood**, **Quartz** crystals, etc.; ⑨ SW 22 mi., to Trigo: (a) Dome Rock Mts. in T. 2 N, R. 21 W, area placers—**Gold**; (b) Red Cloud Mine—**Argentite** and argentiferous **Galena**; ⑩ take old hwy. W for 2 mi., then dirt road S to a bend to Right into trees. Find poor road Left under phone wires, go to last low hill, turn Left over saddle, in trenches in basin—**Lazulite** and **Pyrophyllite**.

SALOME: ① S past jail on dirt rd. to ghost camp of Harquahala, noted mining center with a considerable history: (a) area great mines, Harquahala Bonanza, Extension, Summit Lode, Narrow Gauge, Grand View; (b) to the NE, the Golden Eagle and subsidiary shafts—**Gold**. (The free-milling ores were extremely rich; a single nugget sprouting leaves of pure gold out of white quartz brought \$10,00 cash at the old price of gold.) ② SE, along road across desert to Tonopah (Maricopa Co.): (a) many regional old mine dumps—**Copper** minerals, **Lead**, **Gold**, **Silver**, **Pyrite**, etc.; (b) random exploration of surface gemstone fields will reveal many collectable specimens—**quartz family gemstones**; ③ Tank Mt., on pediment near the Puzzles, Golden Harp, Ramey, and Regal prospects at E foot of the mts., placers—**Gold**; ④ in the Harquahala Mts. (E of Wendon)—**Tremolite** (fluorescent).

VICKSBURG, N 4 mi., in Granite Wash Hills, area—**Tellurium**.

WELTON: ① W $3\frac{1}{2}$ mi. (6.2 mi., E of Ligurta), dirt rd. S (infamous Spanish Camino del Diablo, *Highway of the devil*, traversing the fierce Lechuguilla Desert to Tinajas Altas),

Arizona

at 28.1 mi. turn E on left fork parallel to the Mexican border to mi. 37.6, a large rock circle (mass grave of Mexicans who died en route to Arizona gold mines), keep right up a black mesa, all area—**agate**, **chalcedony**, **jasper**, **jasp-agate**, **Pyrope** garnets, **petrified wood**, **opalite**, **sard**, etc.: ② SE, in Cabeza Prieta Mts., area of many unlisted collecting localities—**agate** (banded, red moss), **jasp-agate**, **jasper**, **chalcedony**, **sard**, **opalite** (two-toned), **petrified wood**, various **geodes** and **nodules**; ③ NW 6 mi. and 6 mi. NE of Ligurta, Muggins Mts.—**agate** (moss, plume), **jasper**, **chalcedony roses** and **petrified wood** (cycad, ironwood, palm); ④ W 8 mi., in Gila Mts., on E side—**Kyanite**; ⑤ W 5 mi., turn N 3 mi. on dirt rd. to abandoned Johnson Ranch, then E 3 mi. to N trending track for 1½ mi. into foothills (very rugged) to abandoned **Bentonite** mine, park and hike 2½ mi. above mine to survey post, collecting area to N, abundant—gem **agate**.

YUMA, N all along the Colorado R. to Ehrenburg, 100 mi. or so by any access rd. to shored, terraces, and elevated benchlands: ① in boulders along river banks as fine fibrous material—**Dumortierite**, with **Kyanite** and **Pyrophyllite**; ② area surfaces—**agate**, **chalcedony**, **jasper**, **opalite**, **petrified wood** (many kinds), **sard**, etc. (a) E on Hwy. 80 Ligurta, 4 mi. past go NW on dirt rd. then N and E along the Muggins Mts. for 3 mi., N into foothills toward the highest peak 3¾ miles to edge of agate fields which extends a mile to the N—**agate**; (b) collecting area NE of Yuma on military reservation (permission needed from Yuma Test Sta., take rd. to Martinez Lake in the Colorado R. turns W from Hwy. 95 at a windmill and a branch road leads to the Test Station), in the large area from a mile S of the Yuma Test Sta. to 10 mi. N and from Hwy. 95 to the Colorado R.—**jasper**, **agate** and **palm root**.



ARKANSAS

Arkansas is almost equally divided geographically between the Early Cretaceous to Quaternary sediments of the Coastal Plain (52 percent) and the crystalline Paleozoic rocks of the Interior Highlands (48 percent), with the northwestern counties being mountainous and rather strongly mineralized. The major mountain ranges include the Boston and Ozark systems, really parts of the segmented Ozark Plateau, and the Ouachita Mountains, which are the roots of very ancient once towering range.

Although some thirty useful minerals are mined or quarried within Arkansas, there are estimated to be another hundred that could be commercially exploited. The Ozark region is notable for its abundance of the ores of Copper, Iron, Lead, Silver and Zinc, as well as for such nonmetallic as dolomite, limestone, marble, phosphates, and sandstone. The shales and sandstones of the Arkansas Valley contain coal, commercial clays, natural gas, and some metallic mineral ores.

The mountains of western Arkansas contain great quantities of sparkling quartz crystals. These crystals occur in suitable clusters, always six sided and perfectly terminated, ranging in size from slender needles to the *Arkansas candles*, six times as long as thick.

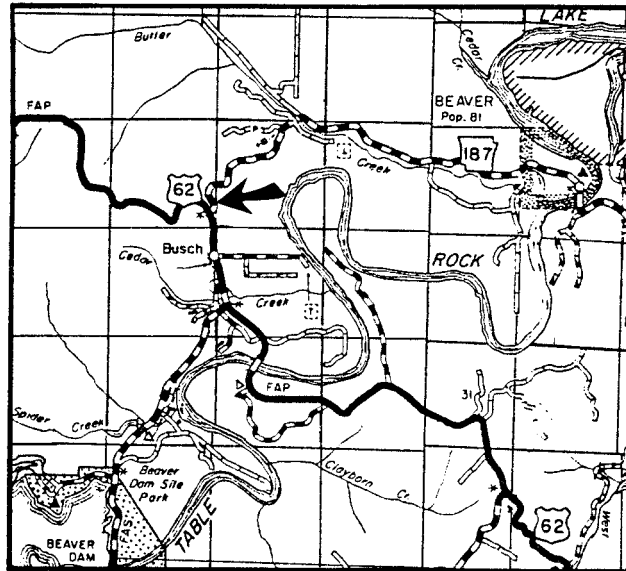
BOONE, NEWTON, MARION & SEARCY COUNTIES

AREA: In this far NW part of Arkansas are many regional mines—**Aurichalcite**, **Goslarite**, **Hydrozincite**, **Sphalerite**, *turkey fat* (a cadmium yellow variety of **Smithsonite**).

CARROLL COUNTY

BUSCH, 0.2 mi. N of the Busch Port Office on the E side of Hwy. 62—banded **chert** (this chert shows concentric banding of light and dark bands which easily polishes - see map to right).

EUREKA SPRINGS, area cave deposits in rocks of Ordovician age, translucent and brightly banded—**onyx marble**.



CRAIGHEAD COUNTY

AREA: Several gravel pits located north of a Co. rd. which connects Arkansas Hwy. 1 & 49, in gravel beds of area—**banded agate** with shades of brown and tan.

Arkansas

GARLAND COUNTY

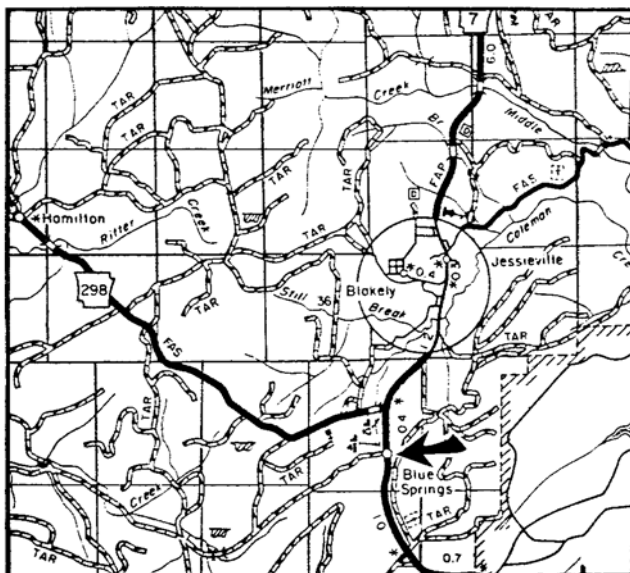
AVANT, 1.8 mi. N, in road ditch and on hill to E (see map below right) —**Wavellite** and **Variscite**.

BLAKELY CREEK, area deposits—**Galena**.

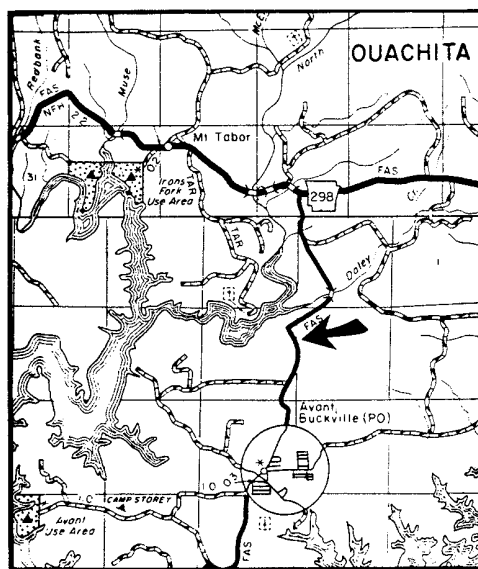
BLUE SPRINGS, Coleman's crystal mine, on Arkansas Hwy. 7 (see map below left) —**Quartz** crystals.

CHANCE: ① W 2 mi., area—**Quartz** crystals (clear, large); ② W 9 mi., Miller Mts., area ridges and slopes—**Quartz** crystals and **Variscite**.

HOT SPRINGS: ① ledge near town (inquire at local rock shops), several feet thick—**Malachite**; ② W 2 mi., on S slope of West Mt., area—**Pyrite**; ③ Hot Springs National Park, area outside boundaries along all surrounding ridges of the Ouachita Mts.—**rock crystal** (all sizes, perfect, clusters, Arkansas candles).



Coleman's Crystal Mine



Avant Wavellite & Variscite

JESSIEVILLE, area mt. ridges—**Quartz** crystals, **Smoky Quartz**. ① 10 mi. N of Hot Springs on Hwy. 7 at Coleman Crystal mine (fee)—clear **Quartz** crystals in iron rich clay soil.

MOUNTAIN PINE, at Dug Hill, near Cedar Glades—**Variscite**.

Mt. TABOR, S, 2 to 3 mi. on rd. to Avant, found in spherules in gray rock—**Wavellite** (yellow-green color).

PRICE, W, 2½ mi. near large bend in rd. and N of Lake Catherine, area pegmatites —**Uranium** and **Columbium** ore. ② across Lake Catherine on S side—**Fluorite**.

HOT SPRINGS COUNTY

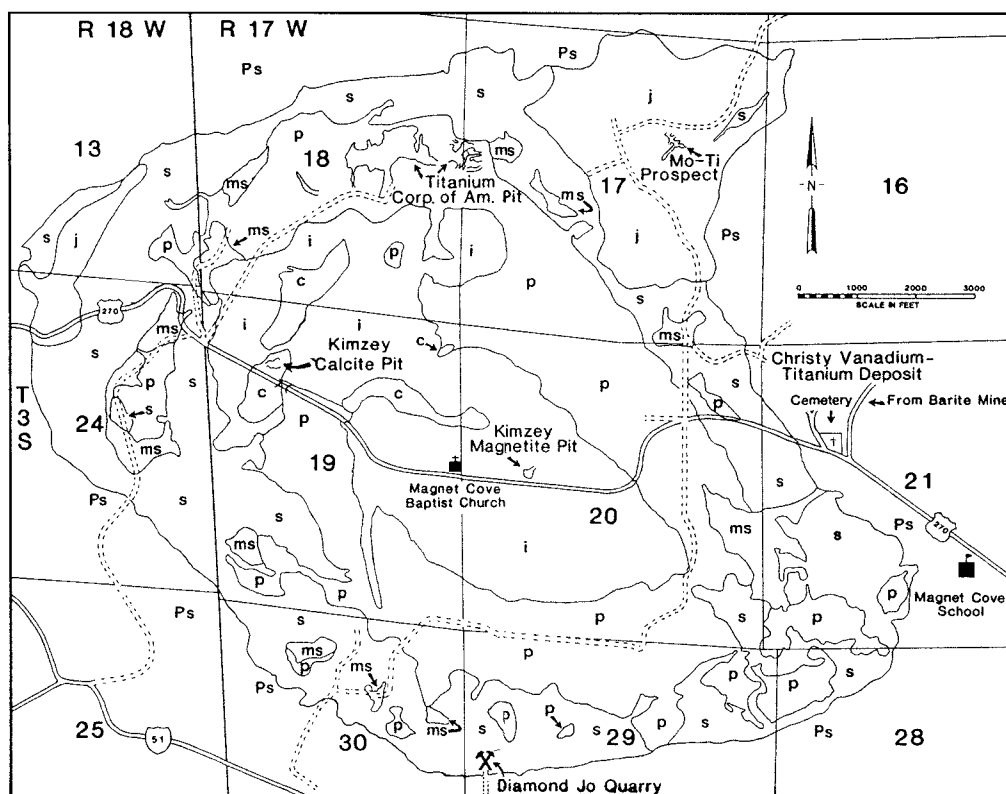
AREA: ① S of and along the Ouachita R. (Co. line with Garland Co.), in pockets or crevices among shales and intrusive rocks—**Asbolite**; ② Novaculite Mts., area —**chalcedony**, **novaculite** (*Arkansas stone*), and **Quartz** crystals.

BUTTERFIELD, area deposits of excellent grade—**tripoli** resembling novaculite.

GIFFORD, area road cuts and RR cuts—**Amber**.

MAGNET COVE. This small area, of great interest to gemologists and mineralogists has long been known as a locality for many rare and beautiful as well as useful gems and minerals (see area map next page). In granite outcrops are found—**Actinolite**, **Aegirine**

A Location Guide for Rock Hounds in the United States



Magnet Cove Bedrock Legend.

- C** Carbonate; residual and secondary phosphate rocks derived from Carbonatite.
- J** Jacupirangite and subordinate sphene pyroxenite.
- I** Garnet and biotite- garnet ijolite, undifferentiated; includes analcime-olivine metagabbro and minor lime silicate rock.
- S** Garnet-pseudoleucite syenite, sphene-nepheline syenite, and garnet-nepheline syenite, undifferentiated; minor garnet biotite melteigite and small dikes of sphene-garnet-nepheline syenite intruding jacupirangite.
- P** Trachyte, phonolite, banded phonolite, and altered phonolite breccia, undifferentiated; small bodies of trachyte and tinguaitite.
- MS** Metamorphosed sedimentary rock.
- Ps** Sedimentary rocks, undifferentiated; numerous igneous dikes are too small to be shown. An inner band, about 2,000' wide, is a contact metamorphic zone.

(with **Labradorite** and enclosed in **Microcline**), **Albite**, **Allophane**, **Ankerite**, **Apatite**, **Arkansite** crystals, **Augite**, **Aventurine**, black **Barite**, **Braunite**, **Brookite** (found in quartzite), *cinnamon stone*, **Coccolite**, **Cristobalite**, *dogtooth spar*, **Eudialyte** (in coarse phase), **Fahlunite**, **Garnet** (**Almandite**, **Andradite**, **Aplome**, **Grossularite**), **Geyserite**, **Hornblende**, **Hydrotitanite**, **Hypersthene**, **Idocrase** (in fields), **Iolite**, **Leucite**, **Magnetite**, **Melanite**, **mica**, **Miserite** (pale pink, Wollastonite structure), **Nepheline**, **Octahedrite**, **Oligoclase**, **Opal**, **Pectolite** (as splinters), **Rutile** (found in quartzite), **Schorlomite**, **Smoky quartz**, **sunstone** (pink, gray), **talc shale**, **Wavellite**, **Wollastonite**. ① at the curve on the north roadbank on Hwy. 51 about ½ mi. W of Cove Cr.—**Sphene** nepheline syenite; ② in the north roadbank just west of the Cove Cr. bridge on Hwy. 51, a carbonatite containing—**Carbonate-Apatite**, **Monticellite**, **Magnetite**, **Perovskite**, **Kimzeyite** and **Biotite**; ③ a boulder near the SW corner of the Cove Cr. bridge abutment just S of location 2—**Eudialyte** nepheline syenite; ④ in the S bank of Hwy. 51, near the Magnet Cove Church —**Melanite** garnet, **Nepheline**, **Biotite**; ⑤ in Cove Cr. about 0.2 mi. E of the iron bridge (rd. N from Hwy. 51, E of Magnet Cove Cemetery)

Arkansas

—**Pyrite** cubes; ⑥ on a small hill due S of the cemetery at the jct. of Hwy. 51 and the barite mine rd. (N.L. Baroid sign on Hwy. 51)—**Smoky Quartz, Brookite**; ⑦ near the entrance of the Kimzey Calcite quarry off Hwy. 270 about 1 mi. E of Magnet Cove Baptist Church, pegmatite visible from both sides of rd.: (a)—**Eudialyte** in nepheline syenite; (b) in quarry carbonatite—**Kimzeyite** (zircon garnet).

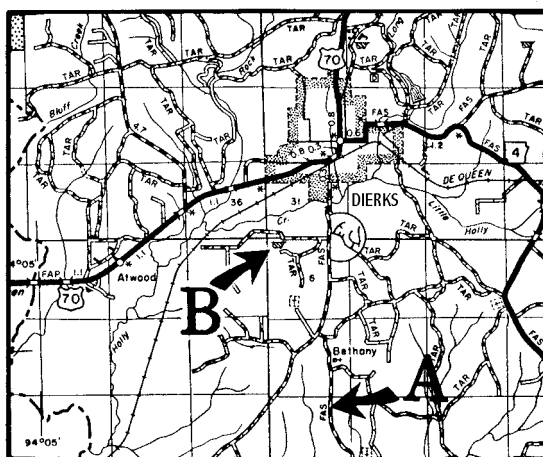
POINT CEDAR, area—**Galena**.

ROCKPORT, extending nearly to Oklahoma, W of Dallas in Polk Co., forming the Zigzag Mts. about Hot Springs and the Ouachita Mts. S of the Ouachita R.—**novaculite**.

MALVERN: ① in old Diamond Joe syenite quarry on S side of Magnet Cove—blue **Sodalite** (east wall), **Acmite**, **Pectolite** and **Apophyllite**; ② (a) On dumps along Rock Island RR tracks near Butterfield station; (b) in talus near Rammel Dam; (c) E side of Hot Springs mountain on bypass around Hot Springs—**Novaculite**.

HOWARD COUNTY

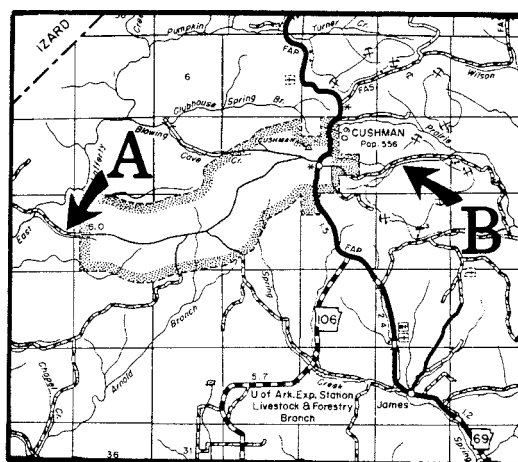
DIERKS: ① 3 mi. due S of town in a county road ditch—**Celestite (A)**; ② due S on county road about 1 mi., then W $\frac{3}{4}$ mi. on small rd., small exploration pit—sand cemented by **Barite** crystals (**B**).



INDEPENDENCE, IZARD COUNTIES

BATESVILLE, regional belt 20 mi. long by 4 to 8 mi. wide extending through Independence, Sharp, and IZARD Counties, area mines—**Hausmannite**, **Psilomelane**, **Pyrolusite** associated with **ferruginous manganese ores**, some brown and red **iron oxides**).

CUSHMAN, ① 1.2 mi. E on the county rd. and Hwy. 69—**Psilomelane**, **Braunite**, **Pyrolusite** and **Hausmannite (B)**, ② in a county rd. ditch 0.6 mi. E of East Lafferty Cr.—**Phosphate** nodules (**A** - black with white coating).



MADISON COUNTY

DELANEY, area mt. ridges and sloped—**Quartz** crystals.

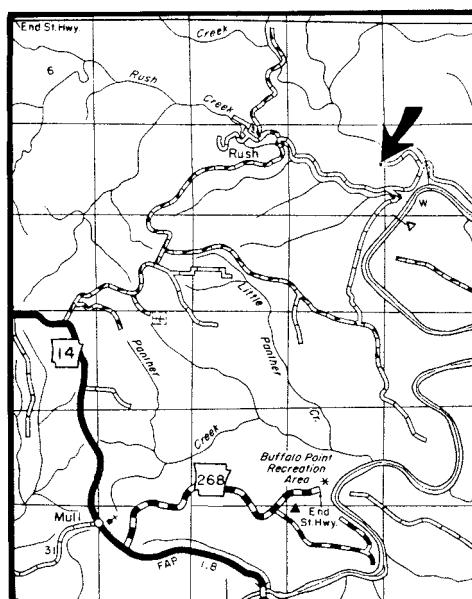
A Location Guide for Rock Hounds in the United States

MARION COUNTY

BUFFALO POINT REC. AREA, take Hwy. 14, N from jct. of Hwy. 268, 2.7 mi. to an improved dirt rd, turn E, bear left at first four jct., then sharply right at the base of hill, a number of abandoned mines—**Smithsonite**, **Calcite**, **Quartz**, **Dolomite**, **Greenockite** and **Sphalerite** (see illustration to right).

BUFFALO RIVER, at Silver Hollow Bluff, a mine—**Zinc**.

YELLVILLE, area lead and zinc mines, especially the Morning Star—**Galena**, **Pyrite**, **Smithsonite** (*turkey fat*) and **Sphalerite**. ② take Hwy. 14 S, turn E to Rush, collect in old mine dumps—**Smithsonite**; ③ on mt. and in Clabber Cr.—**agate**.



MONTGOMERY COUNTY

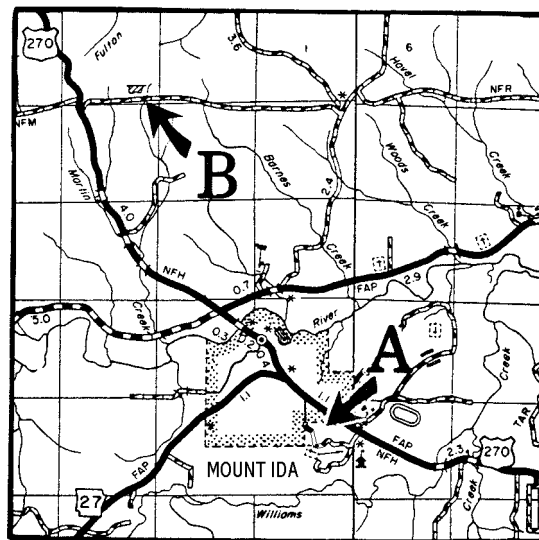
AREA: ① Crystal Mt., surfaces, ridges—**Quartz crystals**; ② Sloan's Well—**Talc** (as encrustations in black shale) and **Halotrichite**.

BLACK SPRINGS, along rd. to Mount Ida, showing in shale—**Talc**.

CADDO GAP, NE, in bed of Collier Cr. at Buttermilk Springs—**Graphite**.

MOUNT IDA, S, at Fisher Mt. (fee), area—rock **crystal** and **Smoky Quartz**. ② at Mt. Ida, 30 mi. W of Hot Springs on Hwy. 270—**Quartz crystals**; ③ at the Ocus Stanley mines 10 mi. SE of Mt. Ida—**Quartz crystals** (**A**); ④ at High Point Mt.—**Quartz crystals**; ⑤ at Lewis Crystal Mine (fee)—**Quartz crystals**; ⑥ NW on US 270 3.5 mi., turn E, at the county quarry located 0.7 mi. E and on the N side of road—**Wavellite** (**B**).

RUBICON (near Virginia City), and at Minnesota, Montezuma, Walnut and Waterloo mines—**Galena**.



NEWTON COUNTY

PONCA, 2½ N of town on Hwy. 43, near crest of the hill a dirt trail to the W is passable for a short distance downhill to near the mines, in dumps—good hand specimen of **Galena**, with minor **Sphalerite**, found on dump.

Arkansas

PIKE COUNTY

AREA, Trinity formation exposures of Cretaceous rocks intruded into Carboniferous formations—**Diamond** (mines) and **peridotite**.

DELIGHT, area deposits—**tripoli**.

HIGHLAND: ① area **Strontium** minerals; ② abandoned gypsum mines N of town; (a) ½ mi. N; (b) 1 mi. N., (c) 3 mi. N and 1.5 mi.

E—**Gypsum, Celestite, fossils**.

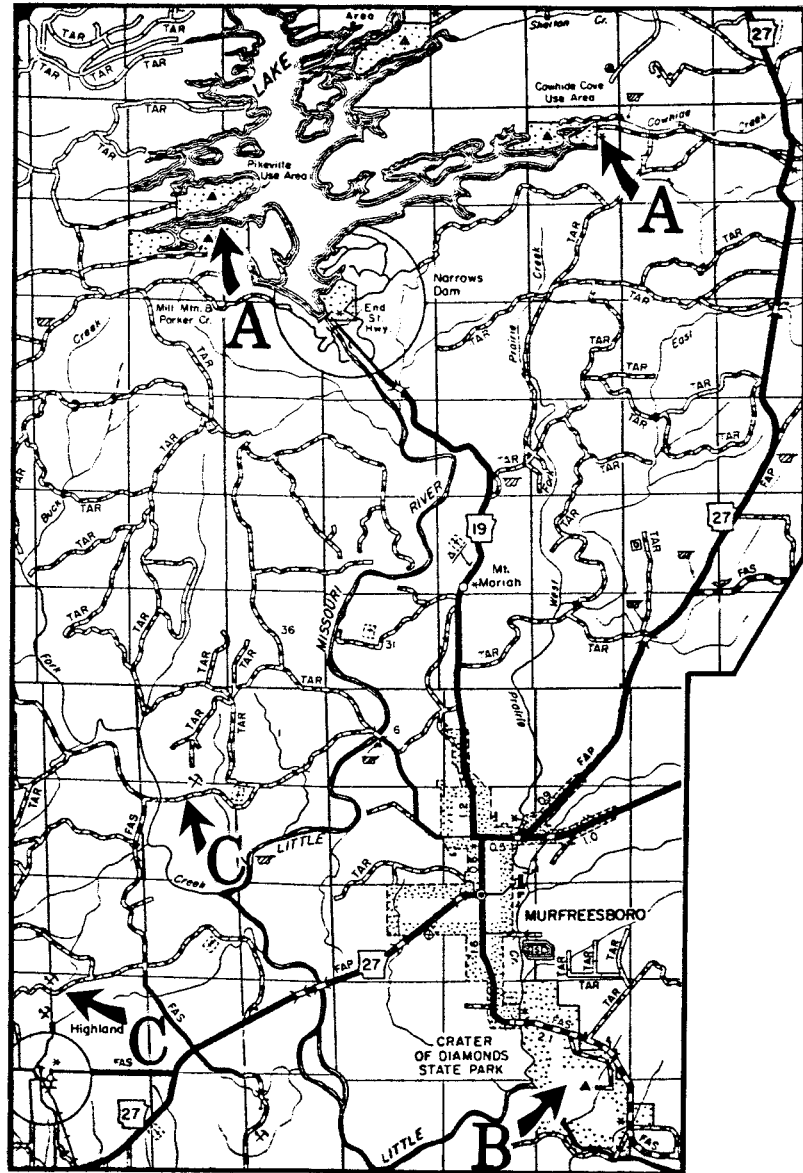
LAKE GLEASON

District, ① S, end of lake—**Antimony** and **Cinnabar**; ② extending due ENE from bottom of lake on a intermittent line to the County line: (a) at the end of the cove between the Pikeville public use area and the Parker Cr. use area on the lake's E side; (b) 2.2 mi. W of Hwy. 27 in the rd. ditch on W side of lake—**Cinnabar**;

MURFREESBORO

O: ① noted area **Diamond** mine, (small fee to collect)—**Diamond**; ② SSE 2½ mi., at Prairie

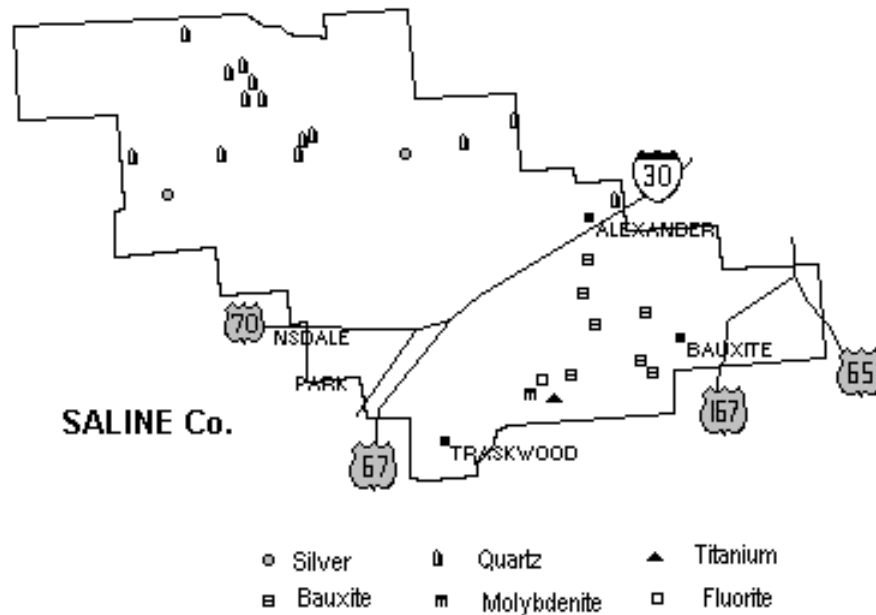
Cr., area—**Amethyst, Diopside, Epidote, Garnet, Hematite, Peridotite, Pyrite** and **Quartz** crystals. ③ area—**Calomel** (white, grayish, or yellowish, darkening on exposure to light).



PULASKI COUNTY

LITTLE ROCK: ① immediate environs; ② just S of city limits, in Fourche Mt. district, embracing an area of more than 12 sq. mi.—**Bauxite**; ③ Kellogg District: (a) Kellogg Mine, Sec. 30, T. 3 N, R. 11 W, and (b) McRae Mine—**Lead** and **Silver** ore.

A Location Guide for Rock Hounds in the United States



SALINE COUNTY

AREA: ① Rabbit Foot Mine—**Bartholomite** (encrustations in crevices as decomposed Pyrite), **Melanterite** and **Pyrite**; ② Wallis' soapstone quarry, near the old Hot Springs-Little Rock rd. in NW¼ Sec. 15, T. 1 N, R. 15 W, near Cane Cr.—massive **soapstone**.

BAUXITE (30 mi. SW of Little Rock), are quarries—gemmy **Bauxite** (Heliotrope bauxite).

BENTON: ① NE 12 mi. and S of Hot Springs rd. in NE¼ Sec. 15, T. 1 N, R. 15 W, as a good outcrop—**soapstone**; ② W, near Olsen switch, impregnations in quartz—native **Copper**.

BLOCHER, N in embedded patches of quartz—**serpentine**.

BRYANT (Twp.), 18 mi. SW of Little Rock in the Bauxite District, several sq. mi. of outcrops—**Bauxite**.

PARSON: ① outcrops in a 6 mi. radius—**Quartz** crystals (milky, smoky); ② broad surrounding area extending into Montgomery Co., from Parson to a point 5 mi. SW of Mount Ida—**Calcite**, **chert**, **Chlorite**, **Feldspar** and **Quartz** (crystals, milky—mostly found along mt. and ridge crests).

SCOTT COUNTY

BLUE BALL, area exposures—**peridotite** and **Diamond**.

SEARCY COUNTY

AREA, Sec. 6, T. 16 N, R. 16 W, the Tomahawk Mine—**Malachite**. (This mine lies in a district noted for its **Zinc** minerals.)

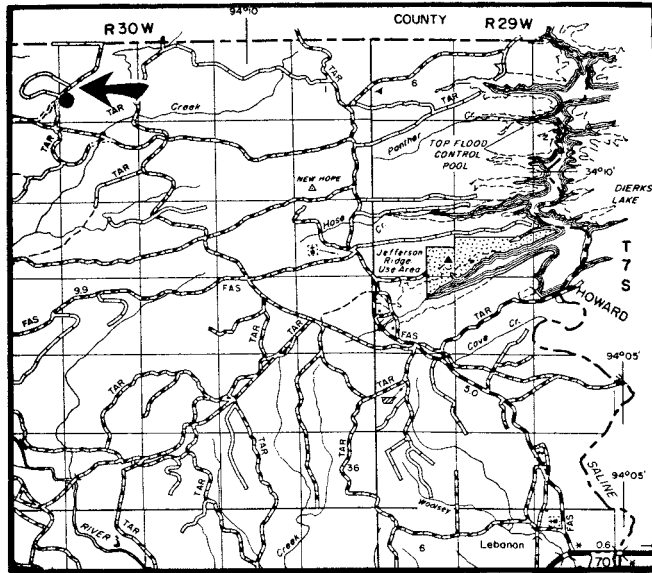
Arkansas

SEVIER COUNTY

AREA, abandoned antimony mines, turn off Hwy. 70, 0.5 mi. W of Sevier-Howard Co. line, proceed about 2.2 mi. N past the turn-off to the Jefferson Ridge use area, turn W (left) onto Weyerhaeuser rd. No. 50,000, proceed 3.6 mi. (the second dirt crossroad) and turn N (right), proceed to faint crossroad about 0.3 mi. N, look for mine dump on NW corner—**Antimony** minerals (see illustration to right).

CONBOY, nearby at the Bellah Mine—**Galena**.

GILLHAM, W, area—**Chalcopryite**. The far N part of this Co. and adjoining S section of Polk Co., in a rather narrow belt of steeply folded Mississippian shales and sandstones (Stanley Shale), as numerous deposits—**Antimony**, associated with small amounts of **Copper**, **Dufrenite** (olive green to black, film on **Iron**), **Jamesonite**, (steel gray, feathery), **Bismuth sulfides**, and **Zinc**.



WASHINGTON COUNTY

FARMINGTON, vicinity, as good grade deposits—**tripoli**.

WHITE COUNTY

SEARCY, area outcrops—**Diamond** and **peridotite**.

CALIFORNIA

Second largest state of the Continental United States, California has a diversified topography and complicated geological history. This immense area divides naturally into a number of remarkably diverse geomorphic provinces: Cascade Range, Sierra Nevada, Modoc Plateau, Klamath Mountains, Basin Ranges, Coast Ranges, the Great Central Valley (Sacramento-San Joaquin), the Transverse Ranges, and the Mojave and Colorado deserts. The southern California deserts further extend by a series of interlocking intermontane arid valleys all the 900 mile length of the eastern half of the almost impenetrable granite barrier of the Sierra Nevada Range.

Not only is California noted for its Mother Lode Gold mines and the huge deposits of Cinnabar that enable early gold miners to extract the precious yellow metal with quicksilver, first mined by prehistoric Indians for facial pigment, but the state ranks among the leading gemstone regions of the world. In fact, the Mother Lode counties which later became the center of gold rush mining were first noted for their gem quality gold quartz, formerly a prime collector's gemstone.

The gem pegmatites of New England and the Black Hills of South Dakota are easily matched by the enormously productive gem pegmatites of southern California's San Diego County. One of the advantages which California vouchsafes to gem and mineral collectors is its general aridity and a lack of the covering vegetation which hides so many of the gem and mineral localities of less arid states. In the Golden State mineralized outcrops are everywhere starkly visible. While the vicissitudes of climate and lack of readily available water in many mineral regions of California can make gem and mineral prospecting rather difficult at times, the great majority of collecting localities can be easily reached by car over roads that are paved almost everywhere except in the farther reaches of the inhospitable desert counties.

ALEMEDA COUNTY

BERKELEY: ① throughout the Berkeley Hills exposures of andesite containing brilliant crystals—**Analcite**; ② MacArthur Freeway to Warren Freeway, turn off at Walnut Cr., go through Caldecott Tunnel to Fish Ranch rd., park by microwave station and climb wall and go down slope to site—**iris agate nodules**.

EAST OAKLAND, at Leona Heights: ① area pyrite mines—**Epsomite** (efflorescence on mine walls and timber), **Pyrite**; ② Alma Mine—**Alunogen** (as a white powder), **Boothite** (with other sulfates of iron and copper), **Chalcanthite** (massive coatings and crystals) with **Melanterite**, **Copiapite**, **Copper** (as arborescent groups) and **Salvadorite** (Kröhnkite).

LIVERMORE: ① SE 16 mi., in the Cedar Mt. district, many area mines—massive **Chromite**; ② Newman mine to SE near Cedar Mt.—**Citrine Quartz**.

SUNOL, SE, on Apperson Cr.—**Talc** pseudomorphs after actinolite.

ALPINE COUNTY

MARKLEEVILLE: ① S, in the Loope district, **jasper**; ② Mogus district, the Morningstar and area mines—**Arsenopyrite** (well formed crystals), **Enargite** with massive **Pyrite**, **Famatinite**; ③ E 7 mi., the Leviathan sulfur mine, abundant —**Chalcanthite**; ④ SSW 10 mi., area exposures of garnetiferous quartzite—bands of **Lazulite** with **Andalusite** and **Rutile & Ilmenite**.

California

MONITOR DISTRICT, on dumps of the Exchequer Mine, as crystals to ½ inch dia.—**Arsenolite**.

AMADOR COUNTY

FIDDLETOWN, Indian Gulch area—**Diamond** (occasional) and **Gold**.

IONE: ① E 2½ mi., the Mace Mine, as veins in serpentine—**Chrysotile**; ② NE 3 mi., the Jackson (Newton) Mine, as chief ore—**Chalcopyrite**.

JACKSON: ① Gwin Mine—crystals of **Arsenopyrite** (some including arborescent masses of crystallized **Gold**); ② Mountain Spring House, S 1 mi.—**Chromite**.

MARTELL, w 4 mi., quarry on Allen Ranch in vein cutting limestone, as crystals to 1 in. long—**Axinite**.

PINE GROVE DISTRICT, the Little Grass Valley Mine, as fibrous sheets—**Tremolite**.

PLYMOUTH: ① Loafer Hill area (near Olete) —**Diamond, Gold**; ② Plymouth Mine, as incrustations on slate—**Ankerite**.

VOLCANO: ① area of Jackson Gulch and Rancheria—**Diamond, Gold**; ② area stream gravels—**Amethyst, Rock Crystal & Rose Quartz**; ③ S 1½ mi., deposits—**Psilomelane** mixed with **Pyrolusite**; ④ SW 5 mi., the Defender Mine—**Marcasite** with **Pyrrhotite**.

BUTTE COUNTY

AREA, T. 21 N, R. 4 E, the Surcease Mine, in Gold ores—native **Antimony, Bournonite, Gold**.

BIG BEAR LOOKOUT, SE 1½ mi., in andalusite schists—**Andalusite**.

BIG BEND, S ½ mi., the Pinkston Mine—auriferous **Barite**.

CHEROKEE: ① area stream gravels, occasional—**Diamond**; ② Cherokee Flat —**Diamond, Gold**.

FORBESTOWN, Gold Bank Mine, as constituent of schists—**Prochlorite**.

OROVILLE: ① Thompson's Flat, area—**Diamond, Gold**; ② N 1 mi., W bank of Feather R., occasional—**Diamond**.

PULGA, N side of Feather R. ½ mi. NE of Big Bar Sta.—**Californite, Grossularite garnet & serpentine**.

PARADISDE, in pockets in quartz veins in Sawmill Peak—**Quartz** crystals (some contain inclusions).

YANKEE HILL: ① area gravels of the Feather R.—**Axinite**; ② area old gold placers —**Axinite** (plum colored, platy, abundant loose clusters and crystals), **Diamond & Gold**.

CALAVERAS COUNTY

AREA: ① Hughs Mine, good **Azurite, Malachite**; ② Morgan Mine—**Altaite**; ③ Railroad Flat—**Alunite crystals**; ④ Robin's Ferry, the Frenchwood Mine—**Altaite, Calaverite, Petzite**, and other **Tellurides**.

ALTAVILLE, E 5-6 mi., on Janokis Ranch, as good crystals—**Diaspore**, with **Chlorite** on **Chromite**.

ANGLES CAMP: ① area mines, widespread: (a) Keystone, Lancha Plana, Union mines—**Chalcopyrite**; (b) Milton, E 9 mi. and NE 10 mi. at Wright Ranch in Salt Springs Valley; (c) 5 mi. SE of Valley Springs and 4 mi. N of Copperopolis on Rd. to Milton; (d) too many other area occurrences to list—**Chromite**; ② N 7 mi. in Quartz exposures as good crystals—**Epidote**.

BALD POINT (on the Mokelumne R.), as large crystals—**Epidote**.

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CAMPO SECO, area—**Boothite** (crystal, massive).

CARSON HILL: ① area mines—**Ankerite, Hornblende**; ② Melones, Morgan, and Stanislaus mines—**Calaverite**; ③ T. 2 N, R. 13 E, at Stanislaus mines in large masses—**Altaite** (with **Calaverite** and **Hessite**), **Melonite & Native Tellurium**.

COPPEROPOLIS, area mines—**Azurite, Bornite, Brachanite** (as druses), **Chalcopyrite & Malachite**.

GARNET HILL, just above confluence of Moore Cr. and Mokelumne R.—**Epidote, Andradite** garnet, **Quartz & Idocrase**.

MOKELUMNE HILL (District): ① S of the hill 2½ mi., and ② Eclipse, the Infernal Mine and other area mines 3 mi. S of the hill—**Gold, Rock Crystal**.

SAN ANDREAS: ① E ½ mi., the Ford Mine, on the 300-ft. level—**Allanite**; ② N 1 mi., the Golden Gate mine—**Ankerite**.

SHEEP RANCH, SE 2 mi., in NW¼ NW¼ Sec. 22, T. 4 N, R. 14 E, on the Hauselt Patent—cobaltiferous **Arsenopyrite**.

VALLECITO, just W, on Rd. to Angels Camp, large masses—**Hornblende**.

VALLEY SPRINGS: ① 2 mi. N of Marie Costa ranch on Paloma rd. (fee) —moss **agate, petrified wood**; ② E on Hwy. 26 to Hwy. 12, then S to Hogan reservoir rd. to Hooten ranch in hidden valley (fee) —**agate, opal**; ③ Hwy. 12 E then N a block and 2 mi. to turnoff S to Snyder ranch (fee) —blue dendritic **opal**.

COLUSA COUNTY

AREA, W part of Co.: ① Manzanita Mine in Sec. 29, T. 14 N, R. 5 W—**Cinnabar, Calcite, Chalcopyrite, Gold** (leaf, wire), **Marcasite & Stibnite**; ② Gray Eagle Mine in Sec. 20, T. 16 N, R. 6 W, in serpentine—**Native Copper, Cuprite, Tenorite**.

COOK SPRINGS, NW 1½ mi., area—**Chromite**.

LODOGA: ① S 4 mi., area—green **Epidote & Hematite**; ② in gravels of Stonyford Cr.—**jasper, Jade**.

STONYFORD: ① Chrome Wonder Mine—**Chromite**; ② gravels of Stonyford Cr. N of Lodoga—**jasper, Nephrite** jade, **serpentine**.

SULPHUR CREEK: ① area, massive auriferous **Alunite**; ② Simmins Springs, W ¼ mi., the Oriental Mine—**Cinnabar**, free **Gold**; ③ many area exposures—**onyx**.

WILBUR SPRINGS, about 2 mi. E of the Lake Co. line, in a quarry—**Calcite, Datolite, Hydromagnesite, Prehnite, Pectolite, Thomsonite & Serpentine**.

CONTRA COSTA COUNTY

BERKELEY (Alameda Co.), E, in Berkeley Hills, Rd. cuts along Skyline Blvd. N of Fish Ranch Rd., in Moraga formation—**chalcedony**.

SAN PABLO, area schist outcrops—**Actinolite, Anthophyllite** (fibrous masses), and abundant **Tremolite**.

WALNUT CREEK, E, on Mt. Diablo: ① E side, in numerous deposits known to prehistoric Indians—**Cinnabar**; ② Mitchell Canyon, at a prospect in a ravine tributary—**Bornite** (with **Chalcopyrite** and a little **Gold**).

DEL NORTE COUNTY

CRESCENT CITY, area ocean beaches—**agate, chalcedony, jasper, moonstone & petrified wood**.

DIAMOND CREEK (Dist.), area prospects—native **Copper**.

GASQUET, S on USFS Rd. to Sec. 19, T. 16 N, R. 3 E, the Camp Group of mines—**Chromite** coated with **Kämmererite & Uvarovite**.

California

ROCKLAND (Dist.), the Keystone Mine—**Copper nuggets**.

SHELLY CREEK (and upper Monkey Cr.), area mines, in quartz veins—**Arsenopyrite, Gold**.

SMITH RIVER, area gravels of the Smith R., occasional—**Diamond**.

EL DORADO COUNTY

AREA: ① many Mother Lode mines—**Arsenopyrite, Gold**; ② regional outcrops of serpentine (concentrated around Clarksville, Cummings, Folsom, Georgetown, Newcastle and Volcanoville)—**Chromite**.

DIAMOND SPRINGS, E 1 mi., the Larkin Mine, as one of the gangue minerals in gold veins—**Ankerite**.

FAIRPLAY: ① Alabaster Cave, and ② old Cosumnes and other area mines in the Foothill Copper Belt, excellent—**Azurite**; ③ Boston Mine—**Bornite** pseudomorphs after **Picrolite**; ④ NE 3 mi., old Cosumnes Mine—**Axinite** (small clear crystals with many faces, on **Epidote**), massive **Bornite** (with **Molybdenite** in a coarse pegmatite), **Chalcopyrite** with **Garnet** (good specimen).

GEORGETOWN, SSE 2½ mi., at Traverse Cr., area—massive **Californite, Garnet & Idocrase**.

GREENWOOD, N 6 mi., at French Hill, as veins—fibrous **Chrysotile**.

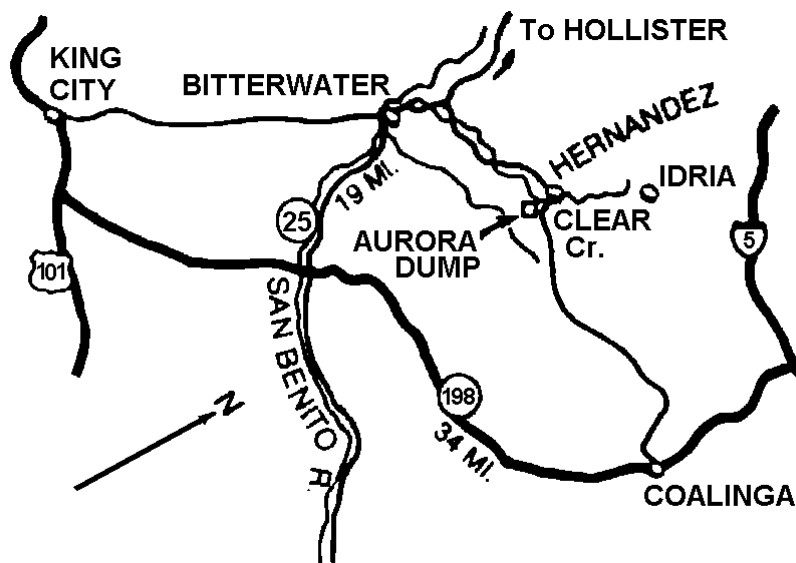
PLACERVILLE: ① area gold placers—**Gold**, phantom **Quartz** crystals, Rock crystals (with many inclusions); ② W 4½ mi., area Copper mines—**Bornite**; ③ NE 5.6 mi., American R. gravels—**Nephrite** jade; ④ Cedar Ravine, Forest Hill, Smith's Flat, Weber Hill and White Rock Canyon, area gravels—**Diamond, Gold**.

FRESNO COUNTY

AREA: ① Grub Bulch, common—**Epidote**; ② Mt. Diablo Range (W part of Co.), many deposits—**Chromite**; ③ Picayune Flat, in sands, excellent—**Zircon**; ④ Tehipite Dome, opposite at the Uncle Sam Mine on Kings R.—**Bornite, Magnetite, Gold**; ⑤ Watts Valley, E side and 1½ mi. S of Hawkins schoolhouse and 700 ft. above Watts Cr.—**Californite, Garnet, serpentine**.

COALINGA: ① Copper King mine, abundant—**Chalcopyrite**; ② NW, near head of White Cr. in SE¼ Sec. 4, T. 19 S, R. 13 E, in cavities of soda-syenite—**Albite, Aegirite, Analcite, Barvikite** (crystals); ③ S 3½ mi., in

Jacolito Canyon—orbicular **chert**; ④ S on Merced rd. to Lost Hills rd. to Jacolitos Canyon, continue W up canyon, look in cr. bed—**jasper, petrified wood, fossil coral**; ⑤ W on Hwy. 198 to Hwy. 25, then NW to Bitterwater and E to Hernandez, follow Clear Cr. rd. 3 mi. to Jade mine sign, found as boulders in creek and lenses in wall of the



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canyon—dark green **Jadeite**, streaked with light green and white; ⑥ on the Aurora Dump (get permission at the Idria store)—cutting quality **serpentine** (see map on previous page).

PIEDRA, N side of the N Fork of the Kings R., in Rd. cuts as large pseudo-hexagonal plates in veins—**Clinochlore**, some **Penninite**.

PINEHURST, Hwy. 180 into King's Canyon National park to Camp Joaquin sign, right to campsite at Chimney Rock—**Quartz**.

SANGER: ① E 9 mi., in Clarks Valley, in pegmatite—**Apatite** (crystals to 1"), large crystals of **Andalusite**; ② N end of Clark Valley, as crystals to 10" long—**Epidote**.

SHARPSVILLE, E 1½ mi., in S½ Sec. 20, T.11 S, R. 22 E, in a narrow pegmatite as radiating masses and prismatic crystals, pink to dark reddish violet color and to 7" long—**Andalusite**.

TOLTHOUSE, on E side of Watts Valley, 1½ mi. S of Hawkins School—**Vesuvianite** (Californite), **Grossularite** garnet.

TRIMMER, area, as a contact mineral with quartz—**Epidote**, **Garnet**.

GLENN COUNTY

CHROME, a few miles N of Chrome Mt., as float—native **Copper**.

FRUTO, 19 mi. distant in T. 19 & 20 N, R 5 & 6 W—**Chromite**.

GRINDSTONE CREEK, the Mammoth Copper Mine in T. 22 N, R. 9 W—**Copper** minerals, **Volborthite**.

ORLAND, W 30 mi., in Sec. 3, T. 22 N, R. 7 W—**Chromite**.

HUMBOLDT COUNTY

AREA, gravels of the Trinity R.—**Diamond**, **Platinum** nuggets (see map next page).

ARCATA, NE 8 mi., at Liscom Hill, in white crystalline veins to 1 ft. wide—**Barite**.

BLOCKSBURG, N 12 mi., the Woods Mine—**Bementite**, **Neotocite**, **Rhodochrosite**.

CENTERVILLE, S 4 mi., on ocean beach as boulders—**Hematite**.

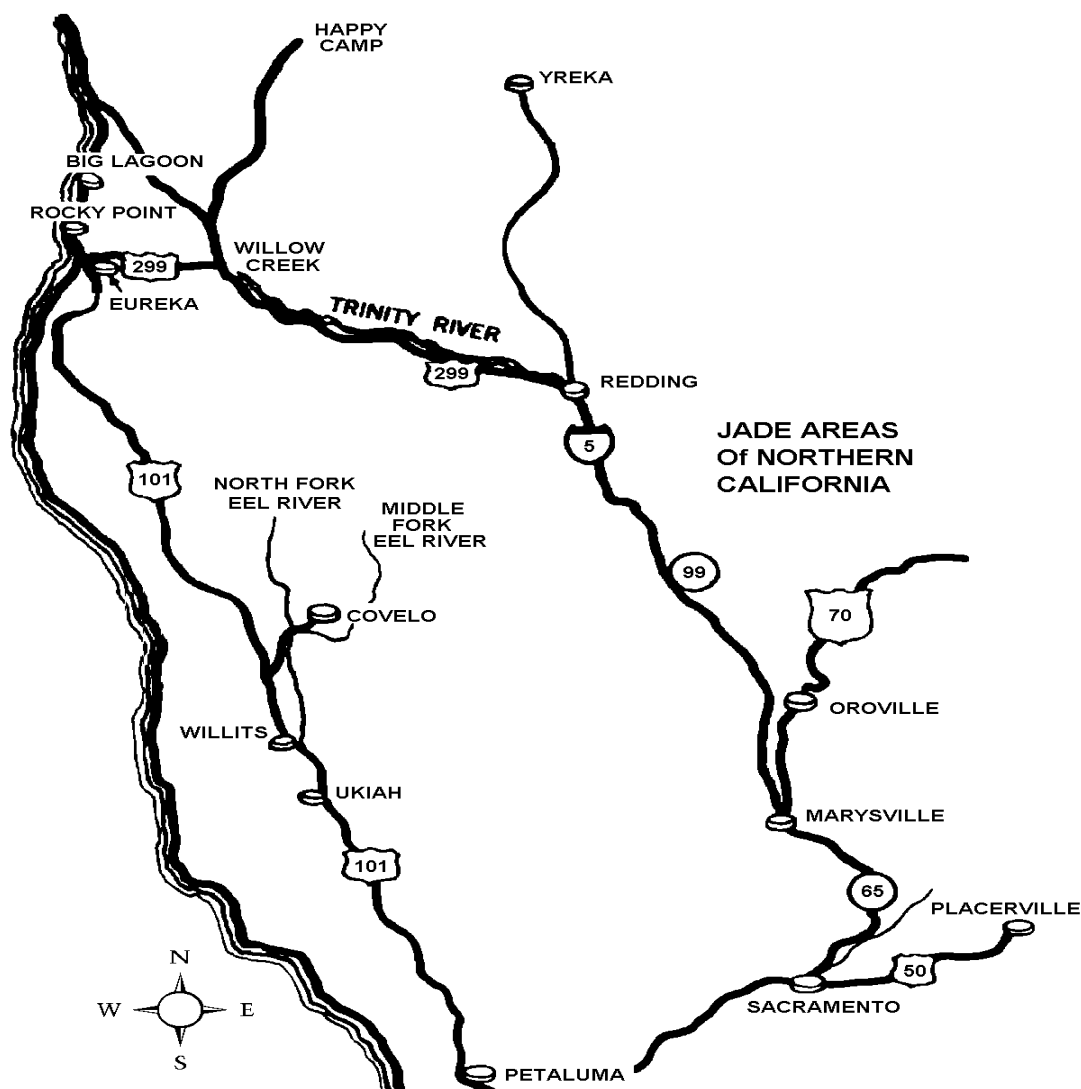
EUREKA: NE 25 mi., on Horse Mt.: ① area exposures—**Chromite**; ② W side in schists as large prisms—**Epidote** (with **Calcite**); ③ N, St. Patrick's Point and all beaches—**agate**, **jasper**.

FORT SEWARD, at the Fort Seward Mine in Sec. 15, T. 3 S, R. 4 E, as primary ore mineral—**Braunite**.

ORLEANS: ① S via USFS Rd. to Sec. 29, T. 10 N, R. 6 E, the Rep Cap Mine—**Bornite**, native **Copper** (as float); ② in Trinity R. up and down stream; and ③ Willow Creek, in Klamath R., rd. parallels river for 30 mi.—**Jade**.

TRINIDAD: ① N 6 mi., at St. Patrick's Point, beach boulders—massive **Pyrite** & **Chalcopyrite**; ② on beach 1 mi. N and S and in boulders on cliffs and at Patrick Point—**brecciated jasper**.

California



IMPERIAL COUNTY

COOLIDGE SPRINGS, area a few mi. S of Fish Springs and W of the old hwy., as concretions—**Barite**.

COYOTE WELLS, area to N—notable **fossils** location.

KANE SPRINGS, in clay hills 15 mi. W—**petrified wood**.

MIDWAY WELL: ① E 2 mi. on Rd. to True Friend and Silver Mom mines on E flanks of the Chocolate Mts.—**Opal, Turquoise**; ② SE 3 mi., the Pay-master Dist., numerous mines—**Argentite** (in gold quartz veins), **Barite** (as gangue).

NILAND, at Obsidian Butte, in lithophysae in an obsidian quarry—**Fayalite** (as occasional crystal) & **obsidian**.

OGILBY: ① N 10 to 12 mi., on either side of Indian Pass, area—**agate, chalcedony, dumortierite, jasper, Quartz Crystals & petrified Palm Root**; ② N in Cargo Muchacho and Chocolate Mts.: (a) area surfaces—**agate, chalcedony, dumortierite, jasper, Quartz Crystals & petrified Palm Root**; (b) Cargo Muchacho Dist., area old

A Location Guide for Rock Hounds in the United States

mines—**Arsenopyrite**. (The Chocolate Mts. are mostly locked up in a US Military Gunnery Range with no travel permitted inside posted boundaries.)

OCOTILLA, NW on Hwy. S2 for 8½ mi., in hills nearby on San Diego-Imperial Co. line—**petrified wood**.

PALO VERDE, S 7 mi. on Hwy. 78, W at pole rack 0.66 mi. to Palo Verde Pass (fee)—**jasper, carnelian, fire agate**.

PICACHO (Dist.), the Bluejacket and other area mines—**Tetrahedrite**.

WILEY WELL (Region): ① very many area collecting grounds, with some routes posted by rock clubs—**Gemstones**; ② Hauser geode beds—**agate, jasper, geodes** (fine gem contents), **gem nodules**. (This is a noted collecting location embracing a considerable area of desert that is extremely hot and hostile in summer.)

INYO COUNTY

AMARGOSA, S almost 8 mi. on Hwy. 127 to Deadman Pass rd., float along rd.—**agate**.

ARGUS RANGE (N of Trona, in San Bernardino Co.), mines of the Minietta and Modoc districts—**Anglesite** (abundant ore) associated with **Azurite** and **Bindheimite** as oxidation product of **Galena**.

BALLARAT: ① area mine dumps—**Cerussite, Wulfenite**; ② American Magnesium Co. mine, as fibrous masses in clay—**Alunogen**, with **Epsomite**; ③ E 5 to 10 mi., on W side of the Panamint Range, comprising much of the area schists—**Attrelite** (Chloritoid) in dark green oblong plates; ④ NE 10 mi. from Panamint mines, in Surprise Canyon, area—**embolite**.

BIG PINE: ① SE 9 mi., area—**Litharge, Massicot**; ② Owens Valley regional mine dumps—**Azurite, Chalcopyrite, Chrysocolla, Cuprite, Malachite** and **Tellurides**; ③ E through Westgard Pass, 12 mi. through Deep Springs Valley to cattle guard, turn left along fence and collect in rocky hills—**Quartz** crystals; ④ E in Last Chance range almost on Nevada line—**Turquoise**.

BISHOP: ① S 4½ mi., area—**Cervantite, Metastibnite, Valentinite**; ② SW 18 mi.: (a) Bishop Cr. Mine—**Arsenopyrite, Loellingite, Pyrrhotite**; (b) Wilshire Gold Mine, at headwaters of Bishop Creek—**Arsenopyrite, Loellingite, Pyrrhotite** and other sulfides; ③ W, in the Tungsten Hills, area mines—**Bithmuthinite** and **Bismutite**.

CERRO GORDO DISTRICT: ① area mine dumps—**Anglesite** (in masses with crystalline crusts enclosing galena cores), **Brochantite, Caledonite, Linarite, Smithsonite** and other **Copper Carbonate ores**; ② Aries Mine—pseudomorphs of **Chrysocolla** after **Cerussite**; ③ Belmont Mine—**Argentite, Tetrahedrite, Stephanite** (the **Tetrahedrite** contains a large silver percentage); ④ Cerro Gordo Mine—**Aurichalcite** (with **Hemimorphite** and **Hydrozincite**), massive **Bournonite, Brochantite** (with **Caledonite** and **Linarite**), **Smithsonite**, compact massive **Jamesonite** (with **Argentiferous Galena**), **Mimetite, Plumbogummite, Chrysotile** (long-fibred), **Leadhillite** (pale sea green imperfect crystals), **Limonite** pseudomorphs after long crystals of **Stibnite, Liroconite**.

COSO HOT SPRINGS, area obsidian outcrops, in spheroidal openings—**Fayalite** (small brown crystals) with **Cristobalite, Tridymite** and **Orthoclase**.

DARWIN: ① area contact zones, abundant—**Epidote**; ② Fernando Mine—**Bismuthinite, Barite, and Scheelite** on **Bismutite**.

DEATH VALLEY, many area saline lakes and deposits—**Borax** minerals.

FISH SPRINGS, S 10 to 12 mi., the San Carlos Mine—**Datolite** (massive white), **Idocrase, Garnet, Lapis Lazuli** and **Opal**.

FURNACE CREEK (Death Valley): ① Furnace Creek Wash borax mine—**Borax, Colemanite, Strontianite** (fluorescent); ② area mines in the Amargosa Range, as

California

immense deposits—**Colemanite**; ③ S, in the Greenwater Dist. of the Black Mts.—**Azurite** and other **Copper** minerals (oxides, silicates, carbonates); ④ Chloride Cliff: (a) area in the Amargosa Range in T. 30 N, R. 1 E, as small, colorless, equant crystals on fracture surfaces of limestone—**Adamite**; (b) the Chloride Cliff Mine, in the Funeral Range—**Cinnabar**, **Metacinnabar**; ⑤ Gower Gulch and the Ryan district outside Death Valley—**Colemanite**.

INDEPENDENCE: ① N on Hwy. 395 5.3 mi., then new rd. N 3 mi. to Colosseum rd., Colosseum rd. E 1 mi., then keep E under power lines and across old railroad for 5 mi., SE past National Forest sign 1½ mi. to Crystal Ridge—**Quartz** crystal; ② E on Mazouka Canyon rd. to old mine on left side of canyon—**opalite**.

KEARSARGE, E 7 mi.: ① Lucky Boy prospect, in a 15" vein—**Molybdenite**; ② Roper iron mine, abundant—specular **Hematite**.

KEELER, E 18 mi., at the Lee Mine—**Argentite**, **Embolite**.

LAWS: ① NE 6 mi., in Gunter Canyon, as white vein 2 to 5 ft. wide, with schists and slates—**Barite** (crystals, massive); ② N 17 mi., area—**Pyrophyllite**.

LITTLE LAKE, ① area—**Sanidine**; ② N 2½ mi. on Hwy. 395 to cinder rd., E into Navel test sta., then 3 mi. E into hills (open weekends; permission at China lake office)—**obsidian**.

LONE PINE: ① E 1½ mi. to Kern Knob, in pegmatite, abundant as poorly developed crystals, in seams in canyons between it and Inyo Mt., green—**Microcline**; ② area Owens Valley mine dumps—**Azurite**, **Chalcopyrite**, **Chrysocolla**, **Cuprite**, **Malachite**, etc.; ③ S 12 mi. on US 395, go E 1 mi. then 2 mi. S and E to rd. parallel to US 395, in nodules—**Obsidian**.

LONG LAKE, E, at Bishop Silver and Cobalt Mining Co., Sec. 14, T. 9 S, R. 31 E—**Annabergite**, **Erythrite**, **Smaltite**, **Argentite**.

MANZANAR, E 2 mi., the Reward Mine—**Caledonite**, **Linarite**, **Chrysocolla** pseudomorphs after Calcite.

MOUNT BLANCO (Dist.), area mines—**Borax minerals**, **Howlite**.

PANAMINT: ① NE ½ mi., the Curran Mine—**Chalcopyrite**, **Pyrite**, **Pyrrhotite**, **Siderite**; ② S 4 mi., the Mountain Girl Mine—**Siderite**; ③ Sunrise Mine—**Argentite**; ④ Panamint Mts., head of Cottonwood Cr., as bottle-green, radial crystals—**Brochantite** (in brown jasper), **Chrysocolla**.

SHOSHONE: ① W 3 mi., as massive brown deposit—**Strontianite**; ② T. 22 N, R. 7 E, as important deposits in clay-shale—**Colemanite**, **Ulexite**.

TECOPA: ① the Noonday Mine—**Scorodite**; ② W 3½ mi. to Hwy. 127, 2½ mi. N on it to ruins of stage station, in gray-green area in hills to W—precious **Opal**.

UBEHEBE MINE, as perfect white crystals—**Axinite** (with **Smithsonite**).

WILD ROSE STATION, in Wild Rose Canyon in light-colored mica schists, abundant—**Jarosite**, **Argentite**, **Cerargyrite**.

KERN COUNTY

AREA: ① Amalie Mine—**Argentite**, **Pyrargyrite**, **Tetrahedrite**; ② Aldridge Mine (NW¼ Sec. 27, T. 25 S, R. 32 E), abundant crystals—**Epidote**; ③ Castle Butte, SE side in foothills N of Hwy. 466—**agate**, **chalcedony**, **chert**, **jasper**, **petrified wood**; ④ Contact Mine (Sec. 10, T. 10 N, R. 15 W), in vein 6 to 12 in. wide once mined for Arsenic—**Arsenopyrite**; ⑤ San Emigdio Canyon, head of Sec. 10, T. 9 N, R. 21 W—**Stibnite**.

BAKERSFIELD: ① SE at Walker Cr. in area schists—**Chiastolite**; ② NE on Hwy. 178, then W to Greenhorn Mt. Park, (get permission at park office; 1 mi. E at Little Acron mine and ½ mi. farther Huckaby mine—**agate**; ③ N and E 15½ mi. from Greenhorn Mt. Park—**Rose Quartz**.

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BORON: ① area—**Calcite**, **Colemanite**, **Glauberite**, **Kernite**, **Kurnakovite**, **Tincalconite**, **Ulexite** (all fluorescent)

GORMAN, N 4 mi. (of Quail Lake), at the Meeke (Hogan) tin mine, as nodules and stringers—**Cassiterite**.

HAVILAH-KERNVILLE: ① 4 mi. S of Miracle Hot Springs, at Erskine Cr., nodular masses (to 300 lbs.) —**Antimony**, **Stibnite**; ② little Caliente Spring (S of Piute) — **Antimony**, **Stibiconite**; ③ Rayo Mine, Sec. 24, T. 27 S, R. 33 E—**Antimony**, **Stibnite**; ④ Sunset, W 12 mi. and 5 mi. NW of Cuddy Valley, at Antimony Peak, area—**Antimony**.

HOBO HOT SPRINGS, E ¼ mi., in contact deposit—**Actinolite**.

INYOKERN, S on rd., as it curves toward US 395, cut off S 5 mi. on power line rd, take rd. W 2 mi. to site—**rainbow jasper**.

ISABELLA DAM: ① Greenhorn mining dist., the Cadillac claims—**Epidote**, **Scheelite**; ② N on Rte. 178 to W-trending gravel rd. through the Greenhorn Mts.:(a) Huckaby and Little Acron mines—**Epidote**, **Quartz** crystals, **Smoky Quartz**, **Scheelite**; (b) area **Scheelite** mine dumps— **Epidote**, **Scheelite** crystals, **Smoky Quartz** (some with **Epidote** inclusions); ③ Green Mt., area—**Arsenopyrite**.

JAWBONE CANYON: ① Sec. 10, 11, 14 & 15, T. 30 S, R. 36 E, as sulfur yellow fibrous crystals—**Ferrimolybdate**; ② Sec. 5 & 6, area—**Antimony**.

KRAMER: ① area 35 mi. SE of Mojave and just N of Boron—**Howlite**; ② Pacific Coast and Western Borax Co. mines, and ③ the Suckow Mine—**Borax**, with **Colemanite**, **Ulexite**, **Probertite** (**Kramerite**), etc.

MOJAVE: ① Middle Buttes, in stringers of coarsely crystalline materials—**Alunite**; ② N, in Pine Canyon, good crystals—**Barite**; ③ Soledad Butte, in several area mines —**Argentite**; ④ W 18.6 mi. on US 466 to Cache Cr. rd., along rd. about 7 mi. to Horse Canyon, Elev. 5,000 ft. in the Tehachapi Mts., noted locality—“**Horse Canyon**” **agate** (fern, flower, icicle, lace, plume, tube, sagenite, etc.), **fossil** horse bones; ⑤ see Red Rock Canyon. ⑥ NE 25 mi. via good dirt rds., the El Paso Mts., general region: (a) Dutch Cleanser Pumice mine, as fine unusual specimens from abandoned workings—**pumice**; (b) all surrounding region as surface float or shallow pockets requiring minor digging—**agate**, **opal**, **jasper**, **Gold** (surprisingly abundant), **agatized** and **petrified palm wood** and **twigs**. This excellent collecting area can be entered by any of three routes: from the south via the Randsburg Rd., a spectacular route, from the ruins of Hart's place about 14 mi. N of the Randsburg jct. via good dirt rd. heading SE to the Dutch Cleanser Mine; and N from the ruins of Garlock via Mesquite Canyon. productive old mines and area camps include: Cadahy Camp, Owens Camp, Burro Schmidt's Tunnel, Colorado Camp, Gebracht Camp, plus many old mines unnamed on Kern Co. maps.

RANDBURG: ① Yellow Aster and area mines—**Arsenopyrite**; ② S 2 mi., in schist as crystals to 1" long—**Zoisite**; ③ 3 mi. on US 395 past jct. with Ridgecrest rd., turn S on rd. along power line slightly more than 5 mi. and W into El Paso Mt.—**jasper**; ④ from Main st. turn S 7½ mi. to Sunshine Mine rd., turn and go for 1 mi. to end of pavement, continue on dirt rd. 1 mi., in next ½ mi. take two left turns to mine dump—**Rhodonite**; ⑤ take Trona rd. 1½ mi. N, then 6 mi. E on Steam Well rd. and N 5½ mi. from Brown's Ranch in hills—**flower agate**.

RED ROCK CANYON (21 mi. N of Mojave on Rte. 14): ① area lava flows, in cavities—**Analcime**, **Calcite**, **Natrolite**, some **Opal**; ② area surfaces—**agate**, **agatized wood**, **chalcedony**, **jasper**, precious **Opal**; ③ Saltdale (on rd. to Randsburg), side rd. into Last Chance Canyon—gem **Opal**, **petrified wood**.

ROSAMOND: ① W to first N-trending rd., then N several mi. to Gem Hill, many prospects: (a) area—**agate**, **chalcedony**, **jasper**, **plasma**, **Uraninite**; (b) N to NW slopes —gem **jasper** (to huge boulders); ② Portal Ridge, area—**Rhodonite**; ③ Wheeler Springs: (a) area old mines—**Gold**; (b) regional surfaces—**agate**, **jasper**, **obsidian** & arrowheads.

California

TEHACHAPI: ① N, at Tollgate Canyon, large columnar, brittle—**Tremolite**; ② E 7 mi. on Rte. 466 (to 2 mi. E of Monolith), to Cache Cr. Canyon, area—“**Horse Canyon**” **agate**, **chalcedony**, **jasper**.

WOODY (dist. 34 mi. W of Isabella Reservoir), the Greenback Mine—**Azurite**, **Copper Oxides** and **Sulfides**.

KINGS COUNTY

AVENAL, near airport—**petrified wood**.

LAKE COUNTY

AREA, SE¼ SE¼ Sec. 20, T. 12 N, R. 7 W, in a gemstone prospect—purple **Cordierite**.

BARTLETT SPRINGS (15 mi. by steep gravel rd. N of Clear Lake), NW 15 mi., on the Eel R., mines—**Orpiment**, **Realgar**.

COBB: ① in rd. cut on Hwy. 291; ② and at Manke ranch, NW of Cobb—massive **Quartz**.

KELSEYVILLE, SE 4 mi., massive green deposit—**Fluorite**.

KNOXVILLE: ① S 3½ mi. at Lone Pine chromite mine—**Chrysoprase**; ② N 2 mi. at Manhattan Mine (fee) —**Quartz onyx**.

LAKEPORT, S (to S end of Clear Lake), the Sulphur Bank Mine—**Sulfur**, **Melanterite** (abundant as stalactites), **Aragonite**, **Opal**.

LUCERN: ① Clear Lake, and ② Lower Clear Lake area, especially along Cole Cr.—**Dolomite** crystals, **obsidian**.

MIDDLETOWN, to N on rd. to Lower Lake and SE to area N of Pope Valley—**Quartz** (*Lake Co. Diamonds*).

REIFF, area deposits along the Knoxville Rd.—**Chromite**.

UKAIH, Hwy. 20 N 6 mi., then left to Potter Valley and Lake Pillsbury on NW side —**onyx**.

LAKE, NAPA, SONOMA COUNTIES

The Mayacmas Sulphur Bank districts include hundreds of occurrences of **Cinnabar**, with other **Mercury** minerals of less importance. Many deposits of ore are in **opalite**.

LASSEN COUNTY

SUSANVILLE: ① W 8 mi. on Hwy. 36, then S toward Stephens Ranch; and ② N 11 mi. on Hwy. 139, then W, along rd.—**agate**, black & white **petrified wood**.

WESTWOOD, SE, 9 mi., in the Meadow Mt. district (Sec. 28, T. 28 N, R. 10 E), copper prospects—**Copper** minerals and native **Copper**.

LOS ANGELES COUNTY

ACTION: ① S and SW, area hillsides and washes—**agate**, **chalcedony**, **jasper**, **Quartz**; ② W ¼ mi., as sheaves and platy crystals to several inches long—**Stilbite**;

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③ Free Cuba Mine, in quartz—**Copper**; ④ between town and Agua Dulce Canyon, in Escondido Canyon, W on Escondido Canyon rd. at Sir'Kegian gem beds—**agate** (banded, green moss, sagenitic), **Amethyst geodes**, **bloodstone**, **jasper**.

AZUSA: ① N, up San Gabriel Canyon, the Felix fluorite mine—**Barite**, **Fluorite** (purple and green masses and cubes); ② N 8 mi., the Kelsey and O.K. mines—**Annabergite**, **Erythrite**, **Native Silver**, **Smaltite**, **Argentite**, **Barite** and various **Arsenates** (mostly as coatings); ③ site of old Eldoradoville (gold camp of the 1860's), in area canyon detritus—**Gold** (colors, nuggets).

CALABASAS, S on Rte. 27 to within 8 mi. of Coast Hwy., area—**agate**, **jasper**, **Natrolite**.

HOLLYWOOD: ① area of Cahuega Pass, W, near Mulholland Dr., in vesicular basalts—**Heulandite**, **Natrolite**; ② Griffith Park, N side along South Riverside Dr., in small dikes, abundant—**Barkevikite**.

LANCASTER, Portal Ridge, area deposits, massive deep pink—**Rhodonite**.

LANG, Sterling Borax Mine, extensive deposits—**Colemanite**, **Howlite** (fluorescent).

LITTLE ROCK, in Agate Valley, 2 mi. W of Little Rock Dam and 3 mi. S Neary Quarry—**agate**.

LOMITA, area quarries, crystals—**Dolomite**, **Marcasite**, **Pyrite**.

LOS ANGELES: ① Brush Canyon, in veins and cavity fillings in basalt exposures in Pacific Electric Quarry No. 3—**Analcime**, **Natrolite**, **Prehnite**, **Apophyllite**; ② San Francisquito Canyon Reservoir area, E edge in quartz veins, abundant—**Clinozoisite**; ③ Soledad Pass (New Pass), 7 mi. below summit and 90 ft. above creek bed, as veins and stringers in quartz—**Chalcopyrite**; ④ take Golden State Freeway NW to Palmdale cutoff (Hwy. 14), on old Sierra Hwy. NE to Solemint Junction, NE 6 miles to Davenport rd., then E for 1.5 mi. and N to dumps of Sterling Mine in Tick Canyon—**Howlite** (fluorescent).

MALIBU, N, to Malibu Lake, area basalt seams—**Analcite**.

MEADOW VALLEY (Dist.), area prospects—**Bornite**, **Garnet**.

PALMDALE, W 5 mi., area—siliceous **Psilomelane**.

PALOS VERDES ESTATES, area quarries and rd. cuts in Palos Verdes Hills (extreme SW part of Co.)—**Barite crystals**, **fossils** (shells & whale bones).

RAVENNA, N side of hwy. along canyon, area surfaces—**chalcedony**, **copper-stained rock**, **jasper**.

REDONDO BEACH: ① N along beach to El Segundo, low-tide gravels (much destroyed by breakwater construction) —gem **Moonstone**; ② S, in Malaga Cove—seam **agate** (dark brown), **Glaucophane** (with **Crossite**).

SAN FERNANDO, NE 12 mi. in Pacoima Canyon: ① area—**Annabergite** (with **Siderite** and **Pyrrhotite**); ② 12 mi. up from canyon mouth: (a) Denver Mining and Milling property, in veins in schist—**Chalcopyrite** (with **Galena**, **Pyrrhotite** and **Sphalerite**); (b) Indicator Mine, massive—**Sphalerite** (with **Galena** & **Pyrrhotite**); ③ Sec. 17, T. 3 N, R. 13 W, in pegmatite outcrop—**Allanite** (abundant rough tabular crystals to 3" long), **Apatite**, **Zircon** (abundant clear pinkish crystals).

SAN PEDRO, W at Vicente Point, then ½ mi. N in dikes of limestone and breccia, in vugs—**Calcite crystals**.

SANTA CATALINA ISLAND: ① area lead mines, abundant—**Galena**, **Sphalerite**; ② Howlands landing, in a nearby pegmatite outcrop, as good transparent crystals to 1" across—**Albite**; ③ W tip of island, in chlorite-lawsonite schist, as well developed crystals—**Albite**.

SANTA MONICA, W, in the Santa Monica Mts.: ① area slate exposures along access rds., and ② jct. of Franklin and Coldwater canyons, in "spotted" (Cordierite) slates, fair sized crystals—**Chiastolite**.

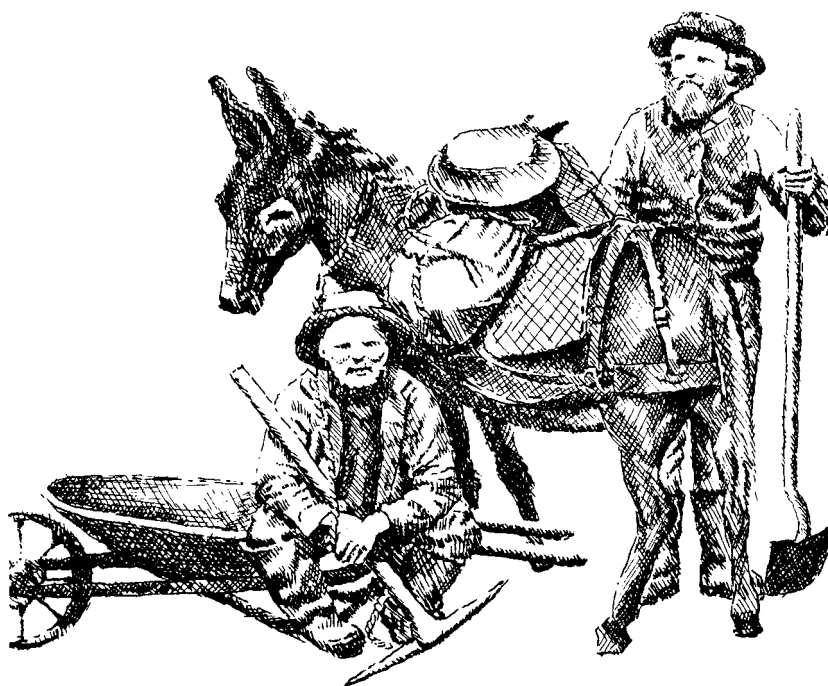
SAUGUS, NE: ① Sierra Pelona Valley, N side, in NE¼ Sec. 12, T. 5 N, R. 14 W, in the Pelona schists as a network of pure white crystals—**Clinozoisite** with interstitial

California

Chlorite and Tourmaline; ② Bouquet Reservoir, in Pelona schist on Bouquet Canyon hwy., in SW¼ NE¼ Sec. 28, T. 6 N, R. 14 W, in lenses of greenish-gray radiating prisms to 4"—**Clinozoisite** (in Albite amphibolite).

SOLEMINT (on US 6 N of San Fernando), E 6½ mi. to Mint Canyon with dirt rd. to rte. leading into Tick Canyon: ① up Mint Canyon a short distance to old Borax mine, gemmy—**Howlite**; ② in tick Canyon: (a) area hillsides—**chalcedony** (clear, nodular), **banded agate**, some good **bloodstone**; (b) at old Colemanite deposit mine—abundant **Colemanite** and cauliflower-like masses of **Howlite**; (c) head of canyon, in cavities in lava, small crystals—**Analcite, Natrolite**.

TUJUNGA, N, in Tujunga Canyon, area placer sands—**Gold** (colors, nuggets).



MADERA COUNTY

AREA: ① Chowchilla R., near Chowchilla crossing on Fort Miller rd., in micaceous schists, crystals—**Chialstolite**; ② Fish Creek, N ½ mi. in the North Fork mining dist. and about 200 yds. E of the Chiquito trail—**Altaite**; ③ Iron Mt., area deposits—**Magnetite**; ④ Kaiser Mt. district, 1½ mi. from Huntington lake rd., abundant crystals—**Calcite**; ⑤ Ritter Range: (a) W side, are exposures—**Lazulite**; (b) Shadow Cr. Canyon, S side in crystalline limestones—**Actinolite, Rhodonite** (with **Epidote** and **Garnet**).

COARSE GOLD: ① N 2 mi., and ② NE 5 mi., area exposures—**Axinite, Byssolite** (fibrous actinolite), **Gold, Quartz crystals, Sphene**.

DAULTON: ① W ½ mi., mine dumps—**Chialstolite** crystals; ② SE 1 mi., the Daulton Mine—**Cubanite**.

MADERA, area prospects—**Chromite** (coated with **Zaratite**).

MENDOTA: ① SW for 20 mi. on Hwy. 11 to ranch house, then S 3 mi. into Panoche Hills, collect E of rd.—**nodules**; ② go 3½ mi. farther to another site—**petrified wood**.

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RAYMOND: ① Mt. Raymond dist., the Star Mine, as large cubes—**Galena**; ② N 12 mi., on the I.X.L. claim, in a quartz vein in **Andalusite** schist, as crystals and masses to several pounds—**Wolframite**.

MARIN COUNTY

AREA: ① Eel R., North Fork, area deposits and float—**Nephrite jade**; ② Point Bonita (foot of Golden Gate Bridge)—**kinradite**; ③ San Francisco Bay shores: (a) Stinson Beach, area exposures of Serpentine, as impregnations and coatings—**Szaibelyite** (**Ascharite**, **Beta-Ascharite**, **Camsellite**); (b) Stinson Ranch, area hillsides—**Axinite** crystals (with **Prehnite**).

FORT BARRY, shale exposures in rd. tunnel, as fibrous tufts—**Alunogen** (with Gypsum).

INVERNESS, NW 1½ mi., on shore of Tomales Bay, crystals in schist layers—**Wollastonite** (with **Tremolite**).

MT. TAMALPAIS, area exposures, as tabular crystals—**Pyrrhotite**.

PETALUMA, SW 5 mi., on E flanks of Massa Hill in Sec. 19, T. 5 N, R. 7 W, in massive serpentine as veins and lenses— **Nephrite jade**, **Satelite** (fibrous serpentine) and **serpentine**.

REED STATION: ① area Lawsonite schists, as crystals to ½"—**Albite**; ② E ½ mi., in schists—**Actinolite** (with **Lawsonite**).

SAN FRANCISCO BAY. Around the north shores are numerous outcrops of the Ingleside chert beds (530 ft. thick) and the Sausalito chert beds (900 ft. thick) which yield a high-silica chert in bright colors, locally called **kinradite**.

SAUSALITO, on SE corner of Marine Peninsula—**kinradite**.

MARIPOSA COUNTY

AREA: ① regional Mother Lode gold mines—**Ankerite**, **Arsenopyrite**; ② Copper Queen Mine in Sec. 19, T. 5 S, R. 15 E—**Barite**, **Tetrahedrite**, **Sphalerite** (triboluminescent); this **Sphalerite** is a mixture of fine grained **Shalerite**, **Barite**, **Chalcopyrite** and **Kaolinite** which will glow when rubbed; ④ Green Mt. copper group (of mines)—massive **Chalcopyrite** (with **Pyrite**).

BAGBY, N- NE 2½ mi. between David Gulch and Flyaway Gulch—**Jade**.

BEAR VALLEY, the Josephine Mine—**Cobaltiferous Arsenopyrite** (**Danaite**), with **Erythrite** and **Mariposite**.

COULTERVILLE: ① Just W as a belt of coarse white carbonate 300 to 500 ft. wide—**Ankerite**; ② SE, near Pleasant Valley Sta., the Purcell-Griffin Mine—**Chromite**; ③ Hwy. 132 W less than 1 mi., on N side of rd.—**Mariposite**.

EL PORTAL: ① S 2½ mi., the P & L Mine, as fibrous masses on quartzite—**Alunogen** (with **Graphite**); ② W 2 mi., as a large deposit—**Barite**.

INCLINE, N 1 mi. from Trumbull Peak, in quartzite veins—**Celsian** (with **Sanbornite** and **Gillespite**).

MARIPOSA: ① SE 6 mi., the Silver Bar Mine—**Argentite**, **Pyrargyrite**; ② S 12 mi., at Moore's Flats in metamorphic rocks and from the Hornitos slates—**Chiasolite**; ③ Sec. 23, T. 3 S, R. 17 E, the Surprise Claim—**Rhodochrosite**, **Rhodonite**, **Spessartite** garnet.

TRES CERRITOS, SW of Indian Gulch, in quartzite—**Alunite**.

California

MENDOCINO COUNTY

AREA: ① Big and Little Red Mts., in T. 24 N, R. 16 W, many area mines—**Chromite**; ② Eel R. gravels—**Jadeite**, **Nephrite**; ③ Leach Lake Mt.: (a) area sheared serpentines—pale pink **Xonotlite**, **Pectolite**, **Nephrite** and **Calcite**; (b) both sides below Leach Lake—**Jadeite**.

CLOVERDALE, S, at Ash Cr. and 1 mi. NE of hwy., on or near the Sonoma Co. line—**Brewsterite**, **Edingtonite**.

COVELO: ① Area rd. cuts along the new Covelo Rd.—**Bornite**, **Lawsonite**, **Epidote** (or **Clinozoisite**, blades to 24", with **Lawsonite** and **Rutile**); ② W 6 mi., in boulders of Williams Cr.—**Jadeite**, **Nephrite**; ③ in Williams Cr. gravels along rte. to Mina—**Jade**.

HEARST: ① 8 mi. distant at Impassable Rock, Mt. Sanhedrin—**Rhodochrosite**, **Inesite** (veins), **Bementite**, **Neotocite**; ② in Eel R.—**Jadeite**, **Actinolite**.

LONGVALE, E 3 mi., at Syke Rock on the new Covelo Rd., as large radiating crystals—**Zoisite**.

MINA, on N Fork of the Eel R., as stream bed boulders, **Nephrite jade** (with **Crocidolite** and **Jadeite**)

NAVARRO, area placers along the Navarro R., in Anderson Valley—**Cinnabar**, **Gold**, **Iridium**, **Platinum**, **Zircons**.

PIETA CREEK, NW 3 mi., in rd. cut on the Cloverdale hwy., as large prisms—**Actinolite**.

POTTER CREEK, area, large masses of good—**Actinolite**.

REDWOOD, NE 6 mi., the Thomas Mine, granular, pale brown—**Bementite** (with **Neotocite**)

WILLITS, N 12 mi., area—**Chromite** (coated with **Uvarovite** garnets).

MERCED COUNTY

LOS BANOS, S 11½ mi. to Mercy Springs exit, follow power line uphill W of freeway to intersection with main power line on top of hill—plume **agate**.

MODOC COUNTY

ADIN, 12 mi. S on Hwy. 139, then left 4 mi.—**rhyolite** (*wonderstone*).

ALTURAS, N 15 mi. and 1 mi. E of Davis Cr. in gravel pits—**obsidian nodules**.

CEDARVILLE, 1 mi. S and 4 mi. W in Deep Cr. area—**agate**, **opalized wood**.

DAVIS CREEK, N 4 mi. on Hwy. 395, then take right fork 4½ mi. and E 3 mi. across cr. to Rainbow mine (fee)—**obsidian**.

FORT BIDWELL: ① pass between here and Pine Cr., area—**agate**, **chalcedony**, **jasper**, quartzite; ② E flank of Warner Mts., between Cedarville and Fort Bidwell, area—**agate**, **jasper**.

GLASS MOUNTAIN (or Buttes, on Siskiyou Co., line)—**obsidian** (banded, black, blue, gold, green, rainbow, red, silver)

GOOSE LAKE, area—**agate**, **chalcedony**, **jasper**.

LAKE CITY, in stream gravels from Ft. Bidwell to Cedarville—**agate** and **petrified wood**.

SUGARLOAF MT. (5 mi. E of Davis Cr. Ranger Sta.), area—**obsidian** (all colors).

A Location Guide for Rock Hounds in the United States

MONO COUNTY

AREA: ① Blind Spring Hill dist., the Diana, Comet, Comanche, etc., mines, as principal copper mineral and source of Silver—massive **Tetrahedrite**, **Galena**, **Cerussite**; ② Epidote Peak, at head of E Fork of Green Cr., massive—**Epidote**; ③ Green Lake, W 1 mi., in metamorphic rocks—**Andalusite**, **Lazulite**, etc.; ④ Mono Craters, E on US 395, area—**obsidian** (banded, various colors); ⑤ Mt. Baldwin, SE base, in vugs and fissures in metamorphic rock 200 yds. NW of the S shore of a large lake, as plum colored crystals to 1"—**Axinite**.

BENTON DISTRICT, area mines—**Argentite**, argentiferous **Galena**, **Gold**, native **Silver**.

BODIE: ① S, in lava beds S of the Bodie Rd. just N of Mono Lake—**sanidine**; ② Standard Mine (on SE town slope), well defined crystals to 4"—**Albite** (with **Quartz**). These crystals are often shells studded internally with fine quartz prisms; ③ 1 mi. W of Green Lake in Green Cr. Canyon—**Lazulite**.

BRIDGEFOOT, W 8 mi., in lava cavities as long slender crystals—**Hornblende** (with **Tridymite**).

CEDARVILLE, area basalt veins in the Warner Range, optical quality crystals—**Calcite** (Iceland spar).

COLEVILLE, S 7 mi., in quartz veins—some **Bismuthinite**, with **Brannerite**.

MAMMOTH, take rd. to Agnew Meadows camp, the Shadow Lake trail 1 mi. to River trail, go left ½ mi. to ridge on left, in talus of ridge—**Rhodochrosite**.

MAMMOTH LAKE, area, as a 4" outcrop—**Barite**.

MOCALNO, E 7 mi., on W slope of the White Mts. at the Champion Sillimanite, Inc. Mine (large commercial Andalusite deposit)—**Andalusite**, **Corundum**, **Diaspore**, **Alunite** (massive pink & brown), **Augelite**, **Lazulite**, **Apatite**, **Pyrophyllite** and **Barite** (fine crystals).

PATTERSON (Dist.), in the Sweetwater Range, area mines—**Argentite**, **Cerargyrite** (in quartz), **Gold**, **Silver**.

TIOGA PASS, The Tioga Mine—**Cobaltite**, **Gold**.

WHITE MOUNTAIN (W of Dyer, NV) : ① W side area mines—**Andalusite**, **Augelite**, **Dumortierite**, **Lapis Lazuli**, **Lazulite**, **Quartz** and **Sillimanite**; ② W slope, between Coldwater and Piute canyons, area mines—**Cerussite**.

MONTEREY COUNTY

BIG SUR, area W side Santa Lucia Range, stream gravels between Point Sur and Salmon Cr. Ranger Sta.—**Jade**, **Nephrite**, **serpentine**.

BRADLEY, NE 18 mi., in Stone Canyon, area—**brecciated jasper**.

CAMBRIA PINES, area ocean beach gravels of Salmon and San Simeon creeks—**Jade**.

GORDA, N on coast: ① Cape San Martin: (a) area low tide gravels—**Nephrite**, **serpentine**; (b) Jade Cove (1,250 ft. SE of Plaskett Point and just S of the mouth of Willow Cr. about 1,200 ft. NE of the cape, reached from Rte. 1), gem quality—**Nephrite**, **serpentine**; ② Plaskett Point, N 8 mi., mouth of Lime Kiln Cr., area beaches—**Rhodonite** boulders, **Axinite** crystals (in metamorphosed serpentine with **Epidote** and **Quartz**).

JAMESBURG, SE, in SE¼ Sec. 31, T. 18 S, R. 5 E—**Cinnabar** in **Calcite**.

KING CITY, W in mts., mine—**Kämmererite** (with **Uvarovite** garnet and **Chromite**).

LOS BURROS (Dist.), in quartz veins—**Arsenopyrite**, **Gold**.

LUCIA: ① farthest N location is at Limekiln Cr. Beach where as pebbles—**Nephrite jade**, **Rhodonite**; ② To S on Hwy. 1 at Plaskett Cr. and just S of it at Jade Cove, the next cove S is another location—**Nephrite jade** (look for new botryoidal jade and a

California

reddish jade); ③ Farther S in Willow Cr. Beach and Salmon Cr. even farther S—**Nephrite jade**.

PARKFIELD, area serpentine belts—**Chromite**.

SALINAS, SE 8 mi., the old Alisal silver mine—**Arsenic**.

NAPA COUNTY

CALISTOGA, 2 mi. N: ① Mount St. Helena Mine—**Argentite**, **Cerargyrite**; ② Palisades Mine—**Arsenopyrite**, **Argentite**, **Deweylite** (gangue mineral with **Gold** and **Silver** ores).

KNOXVILLE: ① 3½ mi. out, the Lone Pine Chromite Mine—**Chromite**, common green **opal**; ② Redington Mine—**Aragonite** on **Cinnabar**, **Botryogen** (as minute aggregates of small red crystals) with **Copiapite**, **Epsomite** (abundant long white fibers in old tunnels), **Quartz** pseudomorphs after **Barite**.

MIDDLETOWN: ① E on Rte. 29: (a) T. 10, 11, & 12 N, R. 6 & 7 W, in decomposed serpentines, and (b) Sec. 36, T. 19 N, R. 10 W, as prospects—**Chromite**; ② NE 2 mi. along hwy. to Lower Lake, as fine cleavage fragments—**Anorthite**; ③ NW 4 mi., the Copper Prince Mine—**Azurite**, **Malachite**; ④ Great Western and Mirabel Mercury mines, off Rte. 29—**Actinolite**, **chert**, **Cinnabar**, **Curtisite**, **Dolomite**, **Jamesonite**, **Metacinnabar**, **Millerite**, **opalite**, **Stibnite** and **Tiemannite**; ⑤ E 1½ mi. on rd. Lower Lake, exposures—**Pectolite**, **serpentine**; ⑥ S 13 mi., high grade deposit—**Chalcopyrite**.

MONTICELLO, W 6 mi., area prospects—native **Copper**.

NEVADA COUNTY

AREA: ① Buckeye Hill, mines—**Chalcocite**, native **Copper**, **Graphite**; ② Indian Springs, area serpentines, as fine octahedrons—**Chromite**; ③ Meadow Lake Dist., masses—**Chalcopyrite** (with **Arsenopyrite**, **Galena**, etc.)

AUBURN, at Pilot Hill—**agate**.

FRENCH CORRAL, area stream gravels—**Diamond**.

GRASS VALLEY: ① S 2½ mi., the Allison Ranch Mine—**Argentite** (with **Pyrargyrite** and **Stephanite**); ② SW 4 mi., at Deadman Flat, the Alcalde Mine—**Arsenic** and **Gold** in **Calcite**; ③ E 5 mi., the Banner Mine—**Argentite**; ④ Empire Mine—**Altaite**.

NEVADA CITY: ① area: (a) Blue Tent mining camp, and (b) Sailor Flat—**agate**, **chalcedony**, **jasper**, **opalized** and **petrified wood**; ② Providence Mine—**Alunogen** (colored blue with copper), **Altaite** (bunches in the Ural vein intergrown with native **Gold** and associated with **Pyrite**, **Galena** and **Quartz**); ③ Washington, Red Ledge chrome mines—abundant **Rhodochrome**, **Calcite** (dogtooth spar), **Kämmererite**.

ORANGE COUNTY

AREA: ① Blue Light Mine (Sec. 11 & 14, T.5 S, R. 7W), abundant—**Sphalerite**; ② Red Hill, as gangue mineral of a **Cinnabar** deposit—**Barite** (crystalline); ③ Trabuco Canyon: (a) Santa Ana Tin Mining Co. Tunnel No. 1, yellow crystals, often twinned—**Arcanite**; (b) Trabuco Tin Mine—**Cassiterite**.

ELSINORE (Riverside Co.) Quadrangle, SW part N bank of San Juan Cr. about 1½ mi. E of the W quadrangle boundary in vein several ft. wide—**Sphalerite** (with **Chalcopyrite** and **Pyrrhotite**).

NEWPORT BEACH, turn W on Cherry St. to sea cliffs, take trail to beach near Arch Rock, on beach and in ravines—**petrified wood** and **petrified bone**.

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PLACER COUNTY

AREA, gravels of Shady Run—**Garnet, Rock Crystal** (with **Chlorite** inclusions), **serpentine**.

APPLEGATE, Best Bet mine (fee) —silicified **Asbestos**.

AUBURN, 12 mi. out, on Wolf Cr. Rd., area—**Pyrolusite, Rhodonite**.

CLIPPER GAP, W 5 mi., at Hotaling, deposit—**Magnetite**.

IOWA HILL, E ¼ mi., deposit of white “slip fiber”—**Asbestos**.

LINCOLN: ① E 3 mi., the Kilaga Mine—**Alunogen**; ② N 6 mi., the Valley View Mine (Whiskey Hill) —**Chalcanthite, Coquimbite**, native **Silver**.

NEWCASTLE, SE 7 mi., in nodular masses—**Chromite** (coated with **Penninite, Kämmererite**, and good crystals of **Uvarovite** garnet).

PENRYN, E 1 mi., the Alabama Mine—**Argentite** (in gold quartz, with **Galena** and **Tellurides**).

TOWLE, SE 9 mi., in Green Valley, deposits—**Chromite**, with **Uvarovite** garnet and **Clinocllore (Kotschubeite)**.

PLUMAS COUNTY

AREA: ① Gopher Hill, Nelson Point, Sawpit Flat, Upper Spanish Cr., alluvial gravels—**Diamond & Gold**; ② Edmonton, Diadem, and Penrose lode mines—**Manganite, Psilomelane, Rhodonite**; ③ Spanish peak, in plumasite—**Hornblende** (var. **Edenite**). The Walker, Engles, and Superior mines of this Co., carrying **Bornite-Chalcopryite** ores, have been the leading copper producers in California since 1915.

CHILCOOT: ① take Hwy. 70 to US 395 N 7 mi. and E 1½ mi. the Crystal Peak (fee) —**Smoky** and **Scepter Quartz**; ② take rd. N for 5 mi., turn right and go NE for 8 mi., turn right and go 0.3 mi., then left less than ½ mi. and turn right, park and walk uphill to left—orchid star **Quartz**.

CLIO, in ironstone 3½ mi. N at Laura quartz mine—**Fire Opal**.

GENESSEE, area gravels and deposits of the Genessee Valley—**Rhodonite**.

MEADOW VALLEY, NW, at Rich Bar on Indian Cr.—**Tremolite**.

MUMFORDS HILL, area mines—**Copper minerals**.

QUINCY, take Meadow Valley rd. W, then N ¼ mi. from river in hills above town W —**Rose Quartz, Rhodonite**.

SPRING GARDEN, NE 9 mi., the Walker Mine—**Cubanite** (with **Chalcopryite** and **Pyrrhotite**).

SUSANVILLE (Lassen Co.), S 20 mi., in Indian Valley at the Pocahontas Mine—native **Copper, Cuprite, Malachite**, native **Silver, Rhodonite**.

TAYLORVILLE, nearby Peters Mine—**Rhodonite**.

THOMPSON PEAK (SW of Janesville), area deposit—white **Apatite**, black **Tourmaline** (Schorl).

RIVERSIDE COUNTY

AREA: ① Box Spring Mt., area mines, crystals to 1½” —**Fergusonite**; ② Coahuila Mt., N side, the Fano Mine—**Amblygonite, Kunzite, Lepidolite, Tourmaline**; ③ pegmatite outcrops on Lookout Mt.; Red Little, Coahuila, Thomas Mts.; Rouse Hill—**Amazonite** (on Thomas Mt.), **Idocrase, Rose Quartz, Tourmaline**.

ALBERHILL, area clay pits—**Boehmite, Gibbsite**.

BLYTHE: ① Floyd Brown Mine—**Fluorite**; ② Santa Maria Mts., area mines and prospects—**Amarantite, Magnesian Copiapite** (as yellowish brown crystalline masses); ③ SW 20 mi., the McCoy Mt., mining dist.—**Copper** minerals; ④ take Lovelin Blvd. 21 mi. NW to Inca Siding, cross tracks, turn left ¼ mi. and then right for 9 mi. to Arlington

California

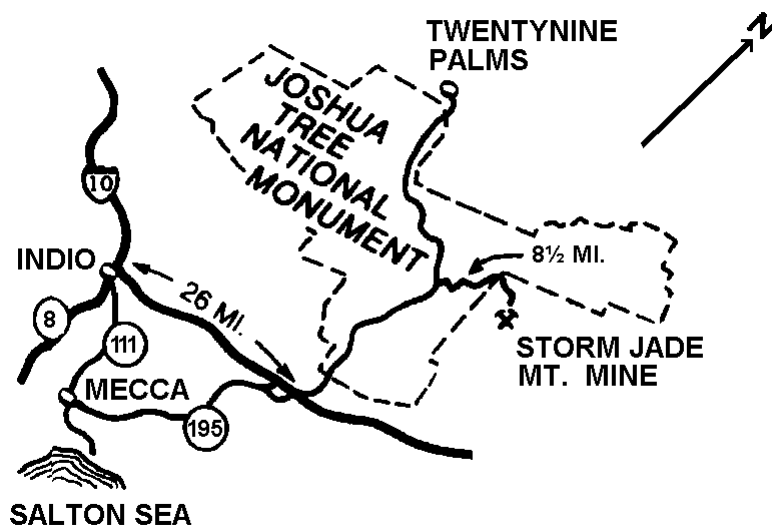
Mine—**Pyrolusite, Psilomelane**; ⑤ in gravels S of Hwy. 60 about 8 mi. W of Blythe—**agate**.

CAHUILLA, area pegmatite mines on Cahuilla Mt., especially the Williamson Mine—**Aquamarine, Beryl, Morganite**.

CRESTMORE: ① The Jensen Quarry—**Idocrase, Rose Quartz, Tourmaline** and abundant **Brucite** (pseudomorphs after Periclase); ② The more than 120 minerals from the famous Crestmore quarries grouped about Chino and Sky Blue Hills, i.e., the Chino, Wet Weather, Lone Star, and Commercial quarries, occur in extensive contact zones in limestone, formed by intrusive plutonic and dike rocks. New, hitherto unidentified minerals are constantly being found. All the great variety of gemstones and minerals are prime collector's items. Some fluorescent minerals are—**Aragonite, Calcite, Clinohumite, Ettringite, Forsterite, Foshagite, Fluorapophyllite, Gyrolite, Harkerite, Jennite, Merwinite, Opal, Parawollastonite, Plombierite, Prehnite, Scawtite, Tobermorite, Wollastonite, Xonotlite**.

DESERT CENTER: ① S, in Chuckwalla Mts., the Pacific Mining Dist., at the Red Cloud Mine, abundant—**Cuprite**; ② NE 2 mi., the Chief of the Hills Mine—**Cassiterite**.

INDIO, Int. 10 E, 26 mi., take turnoff into Joshua Tree National Monument NE for 26 mi., then E 8½ mi. to Storm Jade Mine—**Jade, Vesuvianite, agate**. (see map p. 60)



MIDLAND: ① area pegmatite outcrops—**Spinel**; ② Midland Mine, in limestone—**Tremolite** (small crystals with **Phlogopite**).

NUEVO: ① wall of South Pacific Quarry, as large bladelike plates—Biotite mica; ② in area pegmatites, as radial clusters and crystals—**Cyrtolite** (with **Monazite, Xenotime, Yttrocrasite**).

PACKARDS WELL, S 2 mi., the Palen Mts., area copper mines—massive **Epidote**.

RIPLEY, W in the Mule Mts., area (common, fire), **chalcedony** (nodular, roses with Goethite coating—the so called **fire agate**).

RIVERSIDE: ① E 2 mi., Box Springs Mt., area pegmatites—**Aquamarine**; ② S 2 mi., in new city quarry—brown **Hematite, Allanite** (with **Serendibite** and associated minerals); ③ W 4 mi. and just W of the Jensen Quarry, good dark green crystals to 1" long—**Hornblende**; ④ SW 13 mi., in granodiorite outcrop near the Cajalco Tin Mine—**Dumortierite**; ⑤ Cajalco Tin Mine—**Cassiterite**; ⑥ North Hill, in old quarry, large purple crystals—**Axinite**; ⑦ South Riverside, SE 5 mi., the Crowell Mine, in bunches—**Stibnite**.

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SAGE, N 2½ mi. on Hwy. 79 and then E on dirt rd. to Anita mine—**Tourmaline** and **Lepidolite**.

SIAM CROSSING, 6½ mi. NE on old Hwy. 66 to Danby, then S on road across railroad tracks, and SW 7 mi. along tracks in hills to E—**agate** nodules.

TEMESCAL (Dist.), Sec. 2, 3, 10 & 11, T. 4 S, R. 6 W, area tin deposits—**Cassiterite**.

SAN BENITO COUNTY

DALE, E, at Iron Mt. and Iron Age mine, massive veins—**Hematite**, **Magnetite**.

HERNANDEZ: ① area serpentine belts—**Chromite**; ② in Clear Cr. gravels along rd. to New Idria, and ③ area around Santa Rite Peak—**Albite**, **Analcite**, **Biotite** mica, **Garnet**, **Jadeite**, **Prehnite**, **serpentine**, **Sphene**, **Thomsonite**.

HOLLISTER: ① area stream placers—boulders of **Chromite** coated with **Zaratite**; ② NE, on Antimony Peak, several claims—**Stibnite**.

IDRIA, SW, toward Fresno Co. line, in gravels of headwaters of San Benito R. (25 mi. N of Coalinga, Fresno Co.) —**Actinolite**, **Aragonite**, **Benitoite** (mine), **Joaquinite**, **Natrolite** and **Neptunite**. (see map p. 47)

NEW IDRIA: ① area chrome deposits—**Artinite** (acicular crystals), red **Kämmererite** on **Chromite** (with Uvarovite garnet); ② a nearby quicksilver mine—**Cinnabar**, **Diadochite**. (The New Almaden mines of Santa Clara Co. and the New Idria mines of San Benito Co. are the two most famous cinnabar properties in California.)

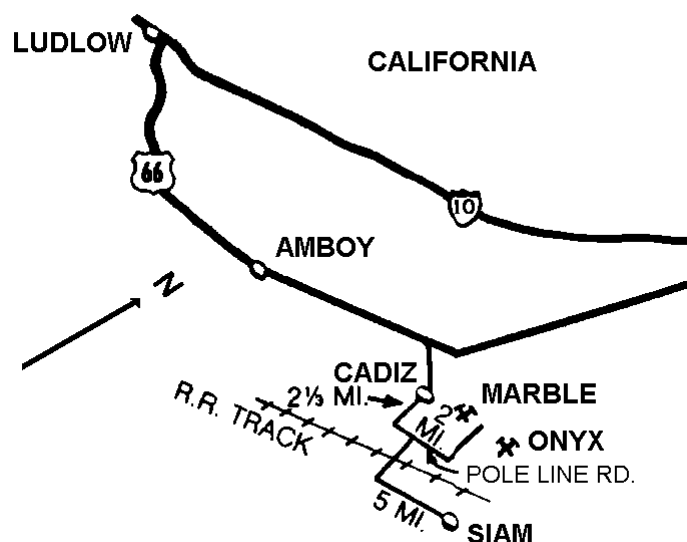
SAN BERNARDINO COUNTY

AREA: ① Amargosa mines (T. 18 N, R. 7 E, in the Amargosa sink), as masses—**Arsenolite**; ② Cottonwood Siding (Santa Fe RR), W 2 mi., the Grove Mine—**Turquoise**; ③ Lead Mt. (T. 10 N, R. 1 W), SW 1 mi., in **Barite** deposit as greenish yellow crusts on limestone—**Alunite**, **Bayldonite**; ④ Sidewinder Mine, SW 2 mi., area—**Brochantite** (small crystals, crusts), **Chrysocolla**; ⑤ Wingate Canyon, area—**Sagenite agate**.

ADELANTO: ① N 5 mi. and 1 mi. W of US 95, area silver mines of the Silver Mt. Dist., masses—**Scheelite** (fluorescent), **Sphalerite** with **Silver**; ② N 30 mi., the Kramer Hills along US 95 area—**agate**, **chalcedony**, **jasper**.

AMBOY: ① W, at Amboy Crater, area—**Boltwoodite** (fluorescent), **jasper**, **obsidian**; ② Bristol Dry Lake, SW margin, extensive deposit, as concretions—**Celestite**; ③ Siberia Crater, in volcanic ash—**Olivine** (granular, as cores of many volcanic bombs), **Hornblende** (basaltic, crystals); ④ E to Chambless on Hwy. 66, S to phone line for 2.3 mi. and E for 2 mi., in quarry to N—**onyx**, **marble**.

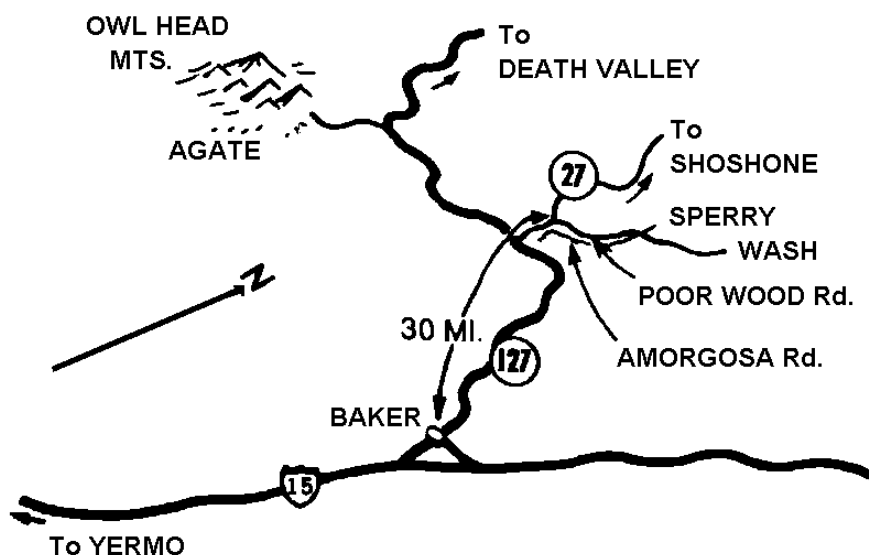
California



ATOLIA, area mines, in Scheelite veins and as part of the gangue rock—**Ankerite**, **Scheelite** (fluorescent).

BAGDAD: ① E $\frac{1}{2}$ mi. on Hwy. 66, take rd. N across railroad tracks and take left fork to power line, then 0.66 mi., right under power line take rough road to hills to N and W—**obsidian**; ② farther along same rd.—**agate**.

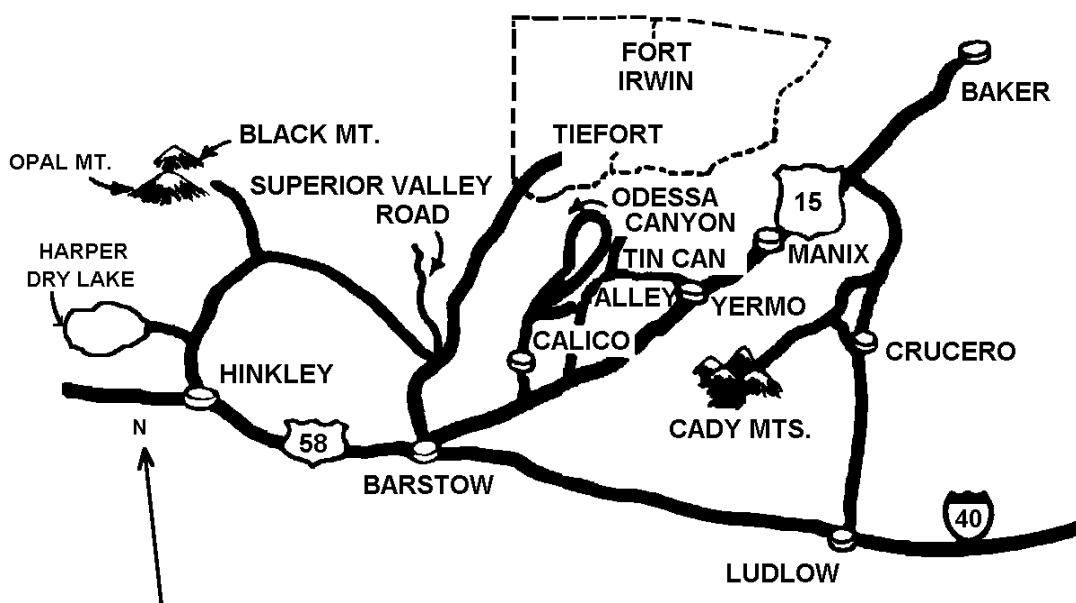
BAKER: ① W, in Soda Mts., area mines—**Brochantite**, **Caledonite**, **Linarite**, **Dioptase**; ② W 7 mi., the Blue Bell Mine, abundant—**Chrysocolla**, **Malachite**; ③ N 10 mi., area—**agate**, **jasper**; ④ Hwy. 127 N to milepost 174, turn E $10\frac{1}{2}$ mi., passing Sperry Sta. ruins and through canyon into open space at Sperry Wash—red and yellow **agate**, **petrified wood**; ⑤ Hwy. 127 N to Salt Springs, go left on Furnace Cr. rd. 13 mi., and left 13 mi. and N 3 mi. into Owlhead Mts. area—**sagenitic agate**, **jasper**; ⑥ W 22 mi. on Int. 15, then S to Afton Canyon—**opalite**, **jasper**; ⑦ Furnace Cr. area—**Strontianite** (fluorescent).



BARSTOW: ① E on US 66 to milepost 113, area surrounding Lavic RR siding, abundant, gemmy—**jasper** (called "Lavic" jasper); ② Milepost 115: (a) rd. turnoff to

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abundant field—**gem jasper**; (b) all surrounding milepost areas—**jasper** (the farther one walks away from the road, the richer and more abundant the specimens); ③ NE 6 mi., area fossil beds—**fossil bones** containing tiny crystals of **Barite**; ④ NE, on N side of lead Mt., in old borax mines, cavities with slender crystals—**Colemanite** on **Calcite** crystal crust; ⑤ N 10 mi., in the mud (Strontium) Hills, Sec. 20 & 30, T. 11 N, R. 1 & 2 W, large deposits as brown and gray granular masses in limestone—**Strontianite**; ⑥ N 11 mi., in Black Mts., area—fossils; ⑦ N 30 mi., Goldstone Camp, area—**Turquoise**; ⑧ N 40 mi., Eagle Crag,: (a) area—blue **agate nodules**, **Bentonite**, **Calcite**, **chalcedony**, **chalcedonic quartz**, **chert**, **jasp-agate**, **jasper**, **jasp-opal**, **opal**, **opalite**, **Orpiment**, **Siderite**, **wonderstone**; (b) Leadpipe Springs, NE 1½ mi., on N side of steep hill—blue **agate nodules**, **chalcedony**, **jasper**, **opal**, **septarian nodules**, **thunder-eggs**; (c) 15 mi. NW of Leadpipe Springs, area—blue **agate nodules**, **Bentonite**, clear **chalcedony** (speckled with **Cinnabar**), **opaline** and **Quartz** crystal **geodes**; ⑨ NW 20 mi., head of Black Canyon near Opal Mt., area—**Opal**; ⑩ Solo Mining Dist., area prospects—**Turquoise**; ⑪ from Central Barstow exit take road to end, then left to Fort Irwin sign and follow signs 15 mi. N to power line, dig—**travertine**; ⑫ from Tiefort village in the Fort Irwin reservation Goldstone rd. goes 2½ mi.—**chalcedony nodules**; ⑬ Fort Irwin rd. 5 mi. N, then Superior Valley rd. 2 mi. N to faint rd. ¼ mi. E, in wash and on hillside—**jasper**; ⑭ E 2½ mi. on Int. 15, the S on dirt rd. 0.3 mi.—**jasper**, **agate**; ⑮ E 35 mi. on Int. 15, turn off at Afton exit, go back a mile on N side of freeway, then N nearly 5½ mi., in hills and in washes—**petrified wood**.



CALICO (Dist.): ① area borate mines—**Colemanite** (fluorescent), **Howlite**, **Ulexite**; ② area silver mines—**Azurite**, **Argentite**, **Cerargyrite**, **Chrysocolla**, **Embolite**, **Strontianite**, **Wulfenite**; ③ Calico Hills: (a) area mines—**Copiapite** (with **Krausite**, **Coquimbite** and **Alunite**); (b) borate, in **Colemanite** ores—geodes (lined with **Strontianite** and light blue to colorless **Celestite** crystals to 1½" long); (c) in the "sulfur hole" below the old borax mines, abundant—**Alunite**, with **Krausite**, etc.; ④ W ½ mi., in the Total Wreck Mine and Langtry Lode, massive—**Cerussite** (with **Chrysocolla**); ⑤ Mule Canyon, W side—**petrified palm**; ⑥ Wall Canyon, area—**Barite**, **Cerargyrite**, **chert**, **Embolite**, **jasper**, **Orpiment**.

California

CIMA: ① E 3 mi., on NW slope of the New York Mts., the Death Valley Mine—**Embolite**; ② N 14 mi., the Carbonate King Mine—**Hydrozincite** (with **Cerussite** and **Smithsonite**); ③ Cima-Ivanpah, many regional mines—**Argentite**, massive **Tetrahedrite**.

COLTON, area limestone quarries—**Chondrodite**.

DAGGETT, E 35 mi., at Pisgah Crater (S of US 66), area—**agate**, **chalcedony** (nodules, roses), **Lavie jasper**, **obsidian**.

DALE, iron ore deposit—**Epidote**, **Garnet**, **Hematite**, **Magnetite**.

DEATH VALLEY: ① area niter beds—**Darapskite**; ② the Mott prospect—**Gowerite** (fluorescent); ③ the Billie Mine—**Hydroboracite**, **Probertite** (both fluorescent); ④ the Monte Blanco Mine—**Meyerhofferite** (fluorescent).

DEATH VALLEY JCT., W to W side of Pyramid peak (E of Rte. 190 and ¼ mi. E of Death Valley boundary)—**onyx**.

EARP, N 5 mi., on S slope of the Whipple Mts., the Blue Cloud Mine—specular **Hematite**, **Chrysocolla** (seams, coatings).

GOFFS: ① Camp Signal, area—**Calciovolborthite**; ② SE 2 mi., in vugs of an outcrop as small crystals—**Atacamite**; ③ N 12 mi. and W of rd. to Lanfair, area—**agate**, **chalcedony**, **jasper**, **petrified palm**.

HALLORAN SPRINGS (NE of Baker on Int. 15), 5½ mi. away at Manvel Dist. in the Turquoise Mts., various small mines, especially the Himalay claims at the head of Riggs Wash 12 mi. ENE of Silver Lake—**Turquoise**.

HINKLEY, N 18 mi., off US 91/466 on secondary rd. to N: ① area—**common opal**; ② both sides of rd. for 6 mi. stretch—**agate**, **chalcedony**, **geodes**, **jasper**.

HODGE, SE 7 mi.: ① Globeerson Iron Mine—**iron minerals**; ② 200 yds. W of the mine, in vein—**Lazulite** (crystalline and massive), **Quartz**, **Muscovite** mica, **Specularite**, **Talc**, **Tremolite**.

IVANPAH, Barnwell area in the New York Mts.—**Turquoise**.

JOHANNESBURG, SE 30 mi. and 15 mi. NE of Leadpipe Springs near S end of Death Valley, area mines—**Cinnabar** (as inclusions in blue-gray **chalcedony** forming the gemstone called **Myrickite**).

LUDLOW: ① NW 2 mi., the Gallinger-Root mines—**Arseniosiderite**; ② NW 4 mi., in Sec. 29 & 30, T. 8 N, R. 7 E, extensive beds—**Celestite**; ③ just E, old mine dumps—**agate**, **chalcedony**, **Chrysocolla**, **Fluorite**, **jasp-agate**, **jasper**, **Malachite**, **Psilomelane** (Calcite, Manganese) and **Smithsonite**.

MIDWAY (45 mi. E of Barstow): ① all area mesas, gullies, etc.—gem **Lavie jasper**; ② E 3 mi., turn off to Afton Sta., dirt rd. to S to Mojave R. bed, cross, and enter Afton Canyon in the Cady Mts., area—**agate**, **jasper**, **chalcedony**. (on the right of the rd. to Afton Canyon along US 91, all area show abundant agate & jasper float.)

MORONGO (Dist.), the United Tungsten Copper Mine, as green needles to ¾"—**Bismutite**.

NEEDLES: ① W, in S end of the Dead Mts., the Black Mt. Mine—**Copper** minerals; ② N end of the Chemehuevis Mts., Bumper group of claims—**Azurite**, **Malachite**; ③ NW 17 mi., area—**Epidote**, specular **Hematite**; ④ SW 36 mi. on US 95, to W-trending dirt rd. into Turtle Mts., to Carson Wells and Lost Arch: (a) area mines—**Gold**, **Silver** minerals; (b) area dry washes, hillsides, etc.—**agate** (common, moss, sagenitic), **chalcedony** (nodular, roses), **jasper**, **jasp-agate**, etc. (The barren desert region extending W to the Old Woman Mts. is gemologically unexplored territory and should prove very productive; travel by 4-wheel drive only).

NIPTON (Rte. 68), W to Int. 15 to Mountain Pass 39 mi. NE of Baker: ① N 1 mi., at East Clark Mt., the Mountain Pass Antimony Mine—**Stibnite**; ② E 2½ mi., the Desert Antimony Mine—**Stibnite**; ③ area **Bastnaesite** occurrence, in dolomitic breccias along an extensive zone—**Allanite**.

ORO GRANDE, W 5 mi., in the Silver Mt. Dist.: ① area mines, prominent—**Cerussite**; ② Amazon Mine—**copper oxides**; ③ Black Diamond Mine—

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Gold, Silver, Copper minerals; ④ N 14 mi. and 2½ mi. from the Mojave R., the Scorpion Mine, coarse-fibred—**Tremolite**.

RANDBURG (Dist.), area mines in and out of town—**Miargyrite** (most abundant Silver mineral).

RED MOUNTAIN, the California Rand Mine, as clear, yellow, colorless, or white coatings on vugs in the ore—**Cervantite** (with **Pyrostilpnite**), **Allophane**.

SAN BERNARDINO, N on Int. 15, Cajon pass area: ① Blue Cut, area—**Actinolite**, Epidote; ② Lone Pine Canyon, area—**Actinolite**; ③ summit, in alluvial fan dropping to the N—**Rhodonite** float.

SARATOGA SPRINGS, 6 mi. away in the Black Mts., the Ibex Mine—**Anglesite** (massive, crystalline), argentiferous **Galena**, **Cerussite**, **Linarite**.

SEARLES LAKE, area, as colorless tabular crystals—**Aphthitalite** (with octahedral **Halite** and massive **Borax**), **Borax**, **Burkeite**, **Gaylussite**, **Hanksite**, **Nahcolite**, **Northupite**, **Pirssonite**, **Sulphohalite**, **Thenardite**, **Trona**, **Tychite** (all fluorescent).

SHOSHONE: ① W, to S entrance to Death Valley, then SE, in Sperry Wash, area—**petrified wood** (cycad, palm); ② SW about 30 mi., at Owl's Head Springs in the Owl's Head Mts., area of Owl's head Canyon—**sagenite agate**.

TWENTYNINE PALMS, SW 1½ mi., in monzonitic porphyry, as crystals to 7" long, abundant, usually as Carlsbad Twins—**orthoclase**. (see map p. 60)

UPLAND, N 12 mi. to Cascade Canyon and 5 mi. by trail up San Antonio Canyon—**Diopside**, **Mica**, **Lapis Lazuli** and **Quartz** crystals.

VICTORVILLE: ① E 11 mi., on E side of hill which is W of a limestone quarry—green **Diopside**, **Uvarovite** garnet, **Vesuvianite** (crystals, massive); ② E 17 mi., the Hillis marble quarry—**Actinolite**, **marble**; ③ SE 30 mi., the Wild Rose group of claims—**Gold** bearing **Tremolite**.

VIDAL JCT., N, in the Whipple Mts.: ① Black metal Mine—**Chrysocolla**, **Horn Silver**; ② Braintruster Mine—**Azurite**, **Chalcopyrite**, **Malachite**.

YUCCA VALLEY: ① on rd. to Old Woman Springs, the Pomona Tile Quarry—**Allanite**, **Euxenite**, **Ilmenite**, **Monazite**; ② NW 15 mi. and 1 mi. above Pipes Canyon public camp, area—**onyx**.

WRIGHTWOOD, go 1 mi. to Heath Canyon, at 1,000' level—**Rhodonite**.

SAN DIEGO COUNTY

ALPINE (on Int. 8 about 35 mi. E of San Diego), area—**Dumortierite**, **orbicular gabbro**.

BANKHEAD SPRINGS, Hwy. 80 2½ mi. to dirt rd., take it N to end—**Rhodonite**.

BORREGO SPRINGS, N in Anza Borrego Desert State Park, along the Riverside Co. line, area—fine **Rhodonite**.

DEHESA, area pegmatite outcrops—**Apatite**, **Dumortierite** (violet red), **Sillimanite**.

ENCINITAS, E 8 mi., in quartz veins of the Willhite group of claims—abundant **Arsenopyrite**, **Chalcopyrite** (masses).

ESCONDIDO, area in Moosa Canyon—**Axinite**.

JACUMBA: ① NNE 8 mi., along RR, Dos Cabezas area—**Hessonite garnet**; ② NW 8½ mi., the Crystal Mine—**Beryl**.

JULIAN: ① area mines—**Alabandite**, **Arsenopyrite**, **Pyrrhotite**, **Gold**; ② S 3 mi., a mine in ores—**copper minerals**, **Cerargyrite**; ③ S 4 mi., the Friday Mine, in **nickel** ores—massive **Pyrrhotite**, some **Chalcopyrite** (with **Pentlandite** and **Violarite**), **Erythrite** (with **Limonite** and **Morenosite**).

California

LAKESIDE: ① NE 12 mi., the Barona copper claims—**Chalcopyrite, Copper** minerals; ② take Wiliat Canyon rd. NE 11 mi. to Wright Canyon, go E for 1.6 mi., then left to old mine—**Garnet, Epidote**.

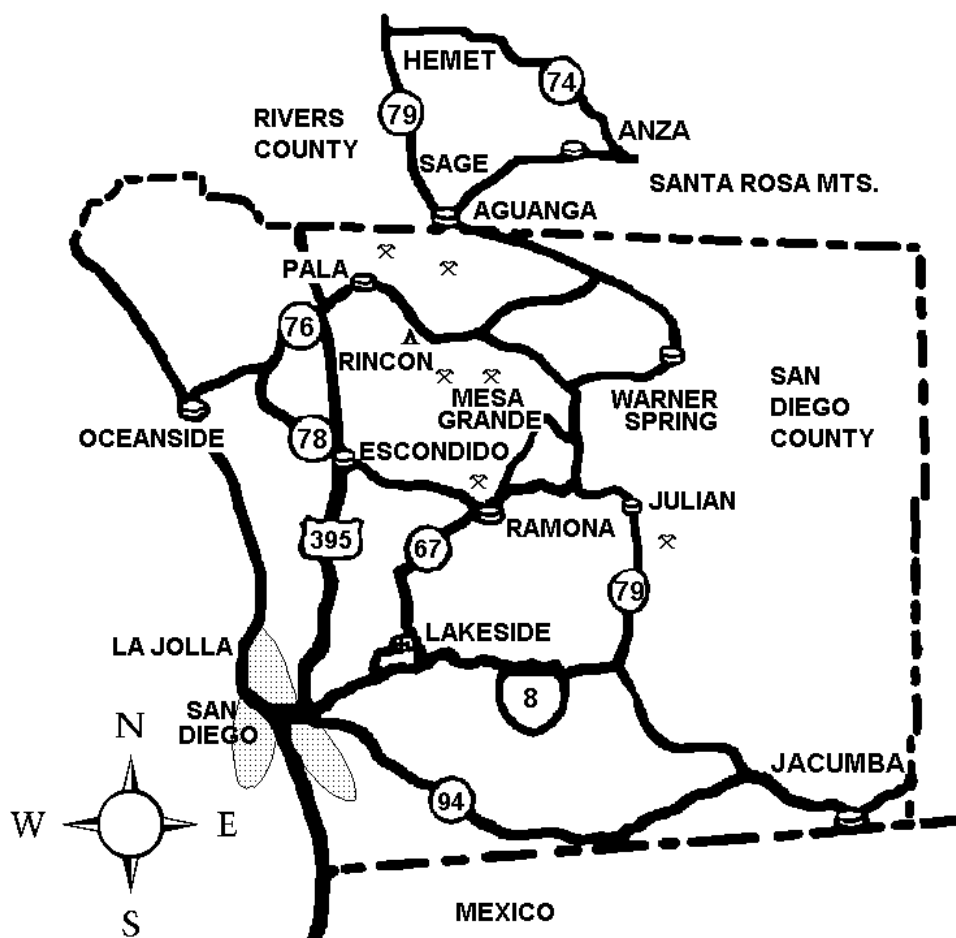
MESA GRANDE (Dist.): ① W of lake Henshaw, near Hwy. 79, many area mine dumps—**Aquamarine**, massive **Beryl, Lepidolite, Morganite, Quartz crystals, Smoky Quartz**, and **Tourmaline**; ② Himalaya Mine—**Amblygonite** and **pegmatite gemstones**.

PALA (Dist.): ① NW 2 mi., on hill about ½ mi. W of the rd., as black masses in quartz veins—**Allanite**; ② N 3 mi., pegmatite on the N. S. Weaver Ranch, as large rough crystals—**Allanite**; ③ N and E, in many pegmatite mines on Hiriart Hill, Pala Chief Mt., and Tourmaline Queen Mt., above the San Luis Rey R.—**Apatite, Aquamarine, Beryl, Cleavelandite, Kunzite, Lepidolite, Morganite, Quartz crystals** (clear, smoky), **Rose Quartz, Spodumene, Tourmaline**; ④ Caterina (and other surrounding mines) —massive **Amblygonite, Rubellite, Lepidolite, Tourmaline**, etc.; ⑤ Steward Mine—**Bismuth** (long irregular crystals sometimes capping **Tourmaline**).

The Pala-Rincon Region is in the heart of an extensive pegmatite gem area, extending from the San Jacinto Mts. to the Mexican border. The pegmatites are more or less irregular dikes intruded into igneous rocks of the granodiorite type, or into schists, rich in Lithium. The gem producing mines are as follows: near the summit of the San Jacinto Range (Riverside Co.), Coahuila Mt., Aguanga Mt., Pala, Mesa Grande, Ramona, minor occurrences east of Julian, and in the Chihuahua Valley, while gem quality **Garnet** occurs in the Jacumba area. The major gem minerals include: **Beryl, Kunzite** (similar to transparent lilac Spodumene), **Topaz, Tourmaline** (abundant in various colors), **Quartz crystals**, **Lepidolite, Schorl** (black Tourmaline), **Smoky Quartz crystals** (some with inclusions), **Morganite, Spodumene, Aquamarine, Cleavelandite**, and various **lithia minerals** (some quite rare).

PALOMAR: ① E rim of Aguanga Mt., the Ware Mine—**Beryl, Lepidolite, Quartz crystals** (clean, smoky), **Schorl, Spodumene, Topaz, Tourmaline**; ② Mountain Lily and Pearson mines—**Beryl, Aquamarine, Amblygonite, Cassiterite, Lepidolite, Schorl, Smoky Quartz crystals, Topaz, Tourmaline**, etc.

ROMONA (Dist.): ① ENE 3½ mi., pegmatite outcrops in Hatfield Cr. Valley: (a) W side—**Aquamarine, Morganite, Spessartite garnet, Topaz, Tourmaline**; (b) many area mines overlooking Hatfield Cr.—**Beryl, Feldspar, Smoky Quartz crystals, Topaz, Tourmaline**; ② ENE 3¾ mi., the J.W. Ware Emeraldite No. 2 Mine—**Emerallite** (greenish blue tourmaline), **Tourmaline** (various colors); ③ SE 7½ mi., the McFall Mine—**Epidote. Grossularite garnet**, etc.; ④ Little Three Mine—**Cleavelandite, Schorl, Smoky Quartz crystals, Spessartite garnet, Topaz** (fluorescent): (a) NE, the Spaulding Mine, and (b) in flats below the Little Three—**Diamond, Gold**.



RINCON (Dist.): ① SSE 1½ mi., the Mack Mine—**Aquamarine, Beryl, Morganite, Tourmaline**; ② Victor Mine—**Cookeite** (colorless and deep pink coatings on quartz), **Albite, Amblygonite** (white cleavable fragments), **Bismuth** (as small bright cleavages in **Lepidolite**), **Kunzite, Orthoclase**; ③ E of the Rincon Indian Reservation, in upper part of Pauma Valley, many area mines by especially the Clark (and Victor) mines on SW spur of Mts.—**Aquamarine, Beryl, Morganite, Tourmaline**.

SAN DIEGO, go E on Int. 8 to Alpine, take Tavern rd. ½ mi. to Arnold Way and go 2½ S to Dehesa rd. and short distance SW to road S into quarry—**Dumortierite**.

WARNER SPRINGS: ① E 3 mi., mine—**asbestos** (fibers to 6" long); ② NE 4 mi., to Hot Springs Mt. on N side of the Chihuahua Valley, many area mines—gem **Tourmalines**, etc.; ③ at Pearson Mine, 13 mi. NW on Hwy. 79 to Oakgrove and E to mine—**Morganite**; ④ at Aguanga Mt., 10 mi. NW on Hwy. 79 and W to Mountain Lily Mine—**Morganite, Topaz**; ⑤ at Ware Mine near summit of Aguanga Mt.—blue-green **Tourmaline**.

SAN FRANCISCO COUNTY

CLIFF HOUSE (at land's End Promontory), NE 1 mi., outcrop—spherulitic **chert**.

COYOTE POINT (S San Francisco Bay and E of the San Mateo Junior College and just N of the yacht harbor)—**chert** (brecciated, orbicular), **jasper**.

FORT POINT, area: ① altered diabase dike in serpentine, as glassy crystals and white veins—**Datolite**; ② basalt fissures, as spherical or massive platy or plumose

California

aggregates replacing the wall rock—**Gyrolite**; ③ Serpentine seams—**Apophyllite** (minute colorless crystals), **Gyrolite**, **Aragonite**, **Barite**, **Calcite**.

SAN FRANCISCO: ① Army Street, excavations of Western Pacific RR, in serpentine veins—**Xonotlite** (with **Brucite**); ② Duboce Street, near market Street, at site of the US Mint in a serpentine ledge, as veins—**chalcedony**, **Curtisite**.

SAN JOAQUIN COUNTY

CORRAL HOLLOW (Sec. 2 & 11, T. 4 S, R. 4 E), the old Ladd Mine—**Bementite**, **Hausmannite**.

SAN LUIS OBISPO COUNTY

AREA, Sec. 15 & 21, T. 27 S, R. 9 E, the Oceanic Mine—**Cinnabar** (as replacements of fossil shells).

ARROYO GRANDE: ① SE 6 mi., on the Fugler Ranch, in a vein 1 to 2 ft. thick—**Barite**; ② take rd. N to Routzahn Co. Park, then E along Cr. almost 10 mi., hike on S side of creek to veins in hills—**Travertine**.

NIPONO: ① Area fields E of US 101—**agate** (moss, sagenite), **fossil bone**, **jasper**, **petrified wood**, **Stibnite**; ② W of US 101 toward ocean, on area farms—peach **agate**. (all the farms sagenite agates lie in the fields, turned up during plowing, as float from unknown sources back in adjoining hills.)

PASO ROBLES, area creek gravels—**Jadeite**.

POZO, S 5 mi., near Salt Cr. in the Santa Lucia Range 9.7 mi. from Routzahn Co. park, various colored—**onyx**.

SAN LUIS OBISPO: ① along Hwy. 1 all the way to Monterrey, numerous accesses to Pacific Ocean beaches, in gravels—**California jade**; ② N, in the Coast Range E of and between Cambria and San Simeon, many area prospects, abundant—**Cinnabar**.

SAN MIGUEL, E of US 101 in Stone Canyon (private property, inquire) —gem **jasper** (brecciated, very good quality).

SAN SIMEON, area beach sediments above high tide mark S of turnoff to the Hearst Castle—**moonstone** (to 100 lb. boulders).

SANTA MARGARITA, SW, near summit of Santa Lucia Range, as fine wires in serpentine—**Native Copper**.

SANTA MARIA, E, in Cuyama Valley, N side area dikes of Augite-Teschenite—**Analcite** (water-clear grains to 6 mm.).

SIMMLER, SE, in the Carizo Plain near dry Soda Lake, large crystals in dried mud—**Bloedite**.

SAN MATEO COUNTY

PALO ALTO, W 5 mi., in seams and cavities in the siliceous material so common in the serpentine of the Cinnabar Districts, as minute yellow crystals—**Eglestonite** (with **Cinnabar**, **Calomel**, **Dolomite**, **Magnesite**, **Opal** and **Quartz**).

PESCADOR BEACH (45 mi. S of San Francisco), area outcrops—orbicular **chert**.

REDWOOD CITY, W 2 mi., in joints and fissures in a siliceous rock replacing serpentine—**Montroydite** (long prismatic and bent crystals), with **Eglestonite**, **Calomel**, native **Mercury** and **Cinnabar**.

SAN MATEO, W, near Crystal Springs Lake on Pacific slope of the redwoods, scattered masses—**Chromite**.

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SANTA BARBARA COUNTY

GOLETA, NW on Hwy. 154, then take rd. E on S side of Lake Cachuma, in hills SE of lake—**petrified wood, jasper**.

POINT SAL, SW, in hills, a minor mining claim—**Chromite**.

SANTA MARIA (straddles San Luis Obispo and Santa Barbara Co. lines), SE 15 mi., on the Sisquoc deposit—**Barite**.

SANTA YNEZ, N 7 mi., on the J.C. Keyes claim, abundant fibrous crystals which phosphoresce when broken in the dark—**Pectolite**.

SANTA CLARA COUNTY

AREA: ① regional exposures of serpentine—**Chromite**; ② NE part of Co. (NE¼ Sec. 27, T.6 S, R. 5 E), the Jones Mine—**Bementite, Rhodochrosite, Manganese Oxides**.

MADRONE: ① NE 3 mi., on the Weber Ranch in the Los Animos Hills, and ② E 4½ mi., on Coyote Cr., deposits—**Siderite**.

MILPITAS: ① SE, Alum Rock Park, in boulders—**Albandite** (with **Allegghanyite, Hausmannite, Tephroite**, etc.); ② NE, at the N end of Calaveras Valley, in eclogite and schists—**Glaucophane**.

MORGAN HILL, along Klagas Cr. (7 mi. NW of Gilroy), a noted gem location—poppy (flowering) **jasper** locally known as *Morgan Hill chert*.

NEW ALMADEN (9 mi. SW of San Jose), great mercury mines—**chert, Cinnabar, Apophyllite, Gyrolite**. (Most of these minerals occur in well developed crystals. The New Almaden miners were crucial during the Civil War for the extraction of Mother Lode gold that paid for the war.)

SAN JOSE, take Coleman rd. to end at Guadalupe Mine—dendritic **agate**.

SANTA CRUZ COUNTY

DAVENPORT, at the Vicente Cr. tunnel—**Calcite** crystals.

SANTA CRUZ, W 2 mi., in the Pacific Limestone Products quarry—**Franckeite, Meneghinite, Stannite**.

SHASTA COUNTY

AREA, the Copper Belt (includes the Bully Hill Dist., Iron Mt., Afterthought, Balaklala, and other mines), as predominant mineral—**Chalcopyrite** (with **Barite** as a gangue mineral).

COPPER CITY, the Peck Mine, common—**Chalcanthite**.

FRENCH GULCH (Dist.), the Greenhorn Mine in Sec. 33, T. 37 N, R. 5 W—**Azurite, Native Copper** and **Copper Sulfides**.

GIBSON, W 4 mi., in Sec. 33, T. 37 N, R. 5 W—**Ferrimolybdate** (with **Ilsemanite** and **Molybdenite**).

HEROULT, S 1 mi., on the Pit R.—**Psilomelane**.

IGO, W 3 mi., the Chicago Mine—**Cerussite, Galena, Pyrite, Proustite, Pyromorphite, Tetrahedrite, Quartz**.

LICK SPRINGS, area, as an incrustation—**Bechilite** (possibly **Ulexite**).

MANZANITA LAKE, area hot springs of Lassen Volcanic National Park, as encrustations—**Alunogen, Alunite** (as isolated crystals and aggregates).

REDDING, W 4 mi., the Silver King Mine, as small perfect crystals—**Cerargyrite**.

ROUND MOUNTAIN, E 7 mi., in amygdaloidal basalt—**Analcime, Analcite, Chabazite, Natrolite** and **Tridymite**.

California

SHASTA (old ghost town, now a tourist historic site), area mines—**Gold**.

SIM'S STATION, E 3 mi., the Stock Asbestos Mine—**Anthophyllite** asbestos.

SOUTH FORK (Dist.), the Big Dike Mine in Sec. 17 & 18, T. 31 N, R. 6 W—**Argentite**, **Native Silver**, **Freibergite**, etc.

SIERRA COUNTY

AREA, Upper Spencer Lake, at the Sierra Iron Mine—**Apatite** (crystals to $\frac{3}{4}$ "), Chlorite (crystals, with **Magnetite** as replacement of **Dolomite**), Some of the Magnetite in this large deposit is **lodestone**.

DOWNIEVILLE, E 10 mi., at Four Hills, pure and abundant—specular **Hematite**.

FOREST, area talcose slates, as perfect octahedral crystals—**Magnetite**.

SISKIYOU COUNTY

The western half of Siskiyou Co. became the famed "Northern Mines" of gold rush history. Its more than 370 gold mines encompassing a highly mineralized gold zone extending in a long belt from north of Yreka (on Int. 15) southwest into adjoining counties. Gold mining has been the county's principal activity (other than contemporary ranching) from 1850 through 1955, with many mines still active seasonally. Raw **native Gold**, along with **Platinum** and stream **Tin**, may still be panned from the regional streams, sometimes in nuggets to fist size. At the same time, in countywide exposures of immense serpentine strata (entire mountains of it in places) are some of the major chromium mines of America, and **Chromite** is very common, along with asbestos and iron Minerals. Just as the New Almaden (Santa Clara Co.) Mercury mines enabled the Sierra Mother Lode mines to yield up their gold, so also did the scores of rich **Cinnabar** mines along the northwestern border of Siskiyou Co. provide the quicksilver for amalgamating the crushed of placer gold of this extraordinary county.

AREA: ① E part of Co.: (a) Agate Flat, area—**agate**, **bloodstone**, **jasper**, **petrified wood**; (b) Tamarack Flat, W of Garner Mt.—**pumice**, **obsidian**; ② Scott Bar Mts., across N end of Scott Valley and due W of Yreka, a heavily mineralized zone extending from Greenhorn summit westward to Scott R., many great gold mines, placers, and hydraulic operations, particularly: (a) N of Fort Jones, around old mining camps of Deadwood, Hooperville, etc., and (b) such tributary creek gulches to Scott R. as French Gulch, Indian Cr., Rattlesnake Cr., etc.—**Gold**, **Cinnabar**, **asbestos**, **Chromite**, and in the placer tailings, **Actinolite**, **marble**, **Quartz**, **Muscovite Mica**, **jasper**, etc.; ③ Siskiyou Mts., N of the Klamath R. all along the Oregon border and extending N into Oregon to Jacksonville and W to the coast, hundreds of rich mines—**Cinnabar**, **asbestos**, **Chromite**, **Gold**, etc. (all regional access roads are USFS dirt rds.; snow blocks many of them until after mid-July.) ④ W half of Co., hundreds of area mines, primarily **Gold**—**Chalcopyrite**, **Pyrite**, **Pyrrhotite**, etc.

CALLAHAN: ① area mines (mainly hidden back in Precipitous Mts.) —**Gold**, **Erythrite** (as coatings on **Smaltite**); ② bed of South Fork of Scott R. from town S toward headwaters—**Gold** nuggets (to several ounces); ③ SW, the Martin McKean Mine—**Chromite**, **Gold**, **Kämmererite**, **Uvarovite** garnets; ④ SW 3 mi., on Boulder Cr., the Richie Mine—**Barite**, **Bornite**, **Galena**; ⑤ dredger tailings just N of town—**Hydrogrossularite** (white jade), **Californite**, **Corylite** (local name for an unusually gemmy material that is mainly clear quartz), green **Mariposite** (var. Muscovite colored green by chromium), **Pyrite**; ⑥ East Fork of Scott R., gravels—**Antigorite**, gem **serpentine**, **Thulite**; ⑦ Camp Eden: (a) SE, the Blue Jay Mine—**Gold**, **asbestos**, **Scheelite**; (b) Jackson Cr.—**Gold**, **Rhodonite**; ⑧ E and NE, to Gazelle Mt. summit: (a) area chromium mines—**Chromite**, **serpentine**; (b) area limestone outcrops—**Calcite**; (c)

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Lovers Leap—**Galena, Copper** minerals, **Calcite**; (d) Grouse Cr., stream placers—**Gold, Chromite, serpentine**; ⑨ SE 6 mi. (very steep rd.) to Scott Mt. public camp area—**Chromite, serpentine, asbestos, Magnetite**. (During the gold rush years, several thousand Chinese worked in or near Callahan. Evidences of their mining lie everywhere.)

DUNSMUIR, S 3 mi., the Brown Mine on Little Castle Cr. (Sec. 2, T. 38 N, R. 4 W), the largest chrome ore body on the Pacific Coast—**Chromite, Kämmererite** (as coatings).

ETNA: ① S 3 mi. on Sawyer Bar rd., outcrop at sharp turn—**marble** (variegated from pinkish to white, black streaked, greenish); ② SW, between Etna Mt. via jeep rd. and trail, Ruffy Lake area (popular fishing lake)—**Rose Quartz, Bull (snow) Quartz**; ③ S 9 mi. on Rte. 3, Sugar Cr., follow dirt rd. up canyon—**Gold Copper** minerals; ④ Scott R. gravels—**Actinolite, asbestos, serpentine, marble, Muscovite** (in quartz), **Quartz**.

FORKS OF SALMON: ① area old mines—**Gold, Cassiterite**; ② area stream gravels—**Gold, stream Tin, Platinum**; ③ SE about 10 mi., King Solomon Mine (a famous gold rush mine reached via Matthews Cr. jeep rd.)—**Gold, Epidote** (crystals in gold ore).

FORT JONES: ① N, area old mines visible on Mt. side—**Chromite, serpentine**; ② W, along Scott R. to its confluence with the Klamath: (a) Indian Cr., stream gravels—**Gold, snow quartz**; (b) Jones Beach, area—**Olivine** crystals on diabase boulders soapstone; (c) Kelsey Cr. bridge, area—**Rhodonite**; (d) Spring Flat, below, in stream gravels—**Zircons**; (e) Scott Bar (see Scott Bar).

GAZELLE, the Dewey Mine, plentiful—**Arsenopyrite, Pyrite**.

Grenada, E 12., at Canyon Butte (Sec. 13, T. 44 N, R. 4 E), in lithophysae in spherulitic **obsidian—Fayalite** (with **Cristobalite**).

HAPPY CAMP: ① area Jade mines along Indian Cr. to the N, especially the Chan Jade Mine, the Blue Star and Huey mines—**Gold, Idocrase, Nephrite** jade, **serpentine**. (The Happy area jade has long been sent to China and returned to America as “Chinese Jade”. Prized specimens are jade laced with **Native Gold**. Individual jade boulders, on exhibit in county museums, frequently weigh more than a ton.) ② N, along Indian Cr. and tributaries, in stream gravels—**Williamsite**; ③ N 9 mi., between East Fork of Indian Cr. and Thompson Cr., on R side of Thompson Mt.—gem **Rhodonite**; ④ NNW 10 mi., South Fork of Indian Cr., gravels—**Californite, Grossularite** garnet, **Idocrase, serpentine**; ⑤ N, to Slater Butte Lookout, then N 3 mi., on W side of Thompson Ridge near crest, mine—**Rhodonite**; ⑥ Sec. 33, T. 17 N, R. 8 W, the Preston Peak Mine—**Bornite, Covellite, Chalcopyrite**; ⑦ Twin Valley Cr., gravels—**Jadeite**.

HORNBROOKE, NE along Jenny Cr.—**agate, carnelian, petrified wood, fossils**.

HORSECREEK: ① a Mercury mine in Sec. 15 & 16, T. 46 N, R. 10 W, in seams of Hornblende schist—**Cinnabar**; ② W, several miles to Honolulu, the Bonanza Mine—**Azurite, Chalcopyrite, Pyrrhotite**.

MOUNT SHASTA, old town of Berryvale, S 6 mi., deposit—**Onyx**.

MUGGINSVILLE (Quartz Valley), area old mines—**Gold, Rhodochrosite**.

OAK BAR, W 4 mi., the Minnehaha Mine on the Klamath R., as semi-transparent crystals—**Cinnabar**.

ORO FINO (3 mi. NW of Greenview in Scott Valley), area old mines—**Gold, Rhodochrosite, Rhodonite, jasper**.

QUARTZ VALLEY (about 10 mi. W of Fort Jones and 4 mi. W of Greenview): ① area gold mines (hidden in surrounding hills)—**Gold, Quartz, Rhodochrosite**; ② area stream gravels—**Gold** colors, **jasper**; ③ Isinglass Mt., area—**Muscovite** (large books and sheets), large **Quartz** crystals.

SAWYER BAR (25 mi. SW of Etna via very steep dirt rd.): ① all area stream gravels—**Gold, Platinum, stream Tin**; ② entire Salmon R. drainage system: (a) area gravels, with very many hydraulic operations evident—**Gold, Platinum, Cassiterite** crystals; (b) East Fork gravels—**Gold, Platinum**; (c) Little South Fork, on N side of Mt. Caesar at head of watershed, in cliffs above a snowfield area—**Azurite, Malachite**; (d) North Fork gravels—**Gold, Platinum, Cassiterite**; (e) South Fork gravels, especially near mouth of

California

Black Gulch—**Gold, Platinum, Rhodonite**, massive bladed **Actinolite**; ③ E 3 mi., White Gulch: (a) numerous old hydraulic operations—**Gold**; (b) at head of gulch—**Pyrrhotite, Rhodonite**; ④ NE, to Idlewild, in gravels of South Russian Cr.—**Gold, Cassiterite, Manganese, Rhodonite**. (The extremely rugged mountains to the south constitute the Trinity Alps Wilderness Area; those to the north, the Marble Mountain Wilderness Area; and the Salmon Mountains Wilderness Area sandwiched in-between. Until 1960 only gold rush mule trails crisscrossed the region outside the wilderness boundaries, now somewhat rebuilt as USFS and logging roads, steep, rugged, and often dangerous.)

SCOTT BAR (3 mi. S of confluence of Scott R. and Klamath R., which is about 3 mi. E of Hamburg), the Scott Bar Mine (operated for more than 100 yrs.)—**Hessite** in gold ore.

SEIAD: ① head of Seiad Cr.—**Graphite**; ② Seiad Valley—**Epidote** (in area shists), **Iddingsite, Chromite** (with **Uvarovite** garnet); ③ T. 46 & 47 N, R. 11 & 13 W, area mines—**Kämmererite**, with **Uvarovite** garnet).

SOMES BAR, N 3 mi., the Yellow Butte Mine—**Chalcocite, Chalcopyrite, Molybdenite**.

YOUNGS VALLEY, area mines—**Chromite, Kämmererite; Uvarovite**.

YREKA: ① area mines and gravels—**Gold**. (Following the floodwaters in 1964, solid gold nuggets to several ounces surfaced in town, especially around the waterworks.) ② Between Yreka and Hornbrook via the old US 99, in rd. cut crossing the Klamath R., as large pale pink crystals in a 2 to 6 inch vein—**Axinite**; ③ N and NW, the Hungry mining district: (a) area mines—**Gold, Copper** minerals, native **Copper, Axinite** crystals; (b) Hungry Cr. gravels, float—**Cassiterite** crystals, **Native Copper** in slate; ④ SE 14 mi., the Peg Leg Mine—**Penninite**, with **Uvarovite** garnet; ⑤ 18 mi. NE—**bloodstone, jasper**.



SOLANO COUNTY

FAIRFIELD, between town and Vacaville, in quarries—**onyx**.

SONOMA COUNTY

AREA: ① countywide exposures of underlying Franciscan serpentines—**Chromite**; ② many lava outcrops, as minute prismatic phenocrysts—**Enigmatite**.

CALISTOGA, W, area—**opalized wood**. A fabulous petrified forest was discovered here in 1871; the very many prostrate opalized logs surpassed in size and gem quality anything in Arizona's Petrified Forest. Individual manes were given to giant stone trees.

CLOVERDALE, at the Geysers, abundant—**Alunogen, Alunite, Boussingaultite** (as crusts and stalactites), with **Mascagnite** and **Epsomite**.

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GLEN ELLEN: ① E side of Sonoma Valley, in cavities in a Soda-rhyolite—**Aegirine, Riebeckite**; ② along rd. to Kenwood, in kaolin deposit—**precious opal**.

HEALDSBURG, SW 2 mi., exposure—**Glaucophane**.

PETALUMA: ① E 2½ mi. along Adobe Cr., area—**jasper, petrified wood**; ② as lenses and veins in serpentine SW 5 mi. and on E side of Massa Hill on Vonsen ranch—**Nephrite Jade**.

SKAGGS SPRINGS, area mines—**Cinnabar, Curtisite, Metacinnabar, Realgar**.

VALLEY FORD, E 2½ mi., area exposure—**Glaucophane** (blue crystals), with **Clinozoisite**.

STANISLAUS COUNTY

LAGRANGE, at Sturtevant ranch, 14 mi. NE on Coulterville rd. (fee) —**Rhodonite**.

PATTERSON, W, on Arroyo del Puerto, deposit—**Psilomelane**.

VERNALIS, W, at the Buckey Mine in the Diablo Range, mine dumps—**Manganese** minerals, **Psilomelane**.

TEHAMA COUNTY

ELDER CREEK: ① at the Grau pit, on fracture surfaces of **Chromite—Aragonite** crystals; ② North Fork, in Sec. 16, T. 25 N, R. 7 W, large deposit—**Chromite**.

TRINITY COUNTY

AREA: ① Trinity R. and tributaries, gravels—**chalcedony, Gold, jasper, Nephrite Jade, petrified wood, Platinum** nuggets, **serpentine**; ② NW¼ Sec. 17, T. 26 N, R. 12 W, the Blue Jay Mine—**Barite, Copper carbonates**, native **Copper, Hausmannite**; ③ Sec. 27, T. 30 N, R. 6 E, the Manganese Queen, Lucky Bill, and Spider mining claims—**Bementite, Rhodonite, Rhodochrosite**; ④ Sec. 17, T. 4 S, R. 6 E, the Shellview Mine—**Braunite, Rhodochrosite**; ⑤ Island Mountain copper mine—**Bornite, Copiapite, Pyrrhotite** (as pale brown scaly masses).

CARRVILLE: ① N 1 mi., at Coffee Cr., area—**Anthophyllite** (dark, soda-rich, as cross-fiber asbestos veins to 2" wide in serpentine); ② NW 2 mi., the Jones Bros. asbestos mine—**Chrysotile**; ③ Golden Jubilee Mine, large cubes—**Limonite** pseudomorphs after Pyrite.

DEDRICK: ① area stream beds, as nodules—**Rhodonite**; ② trail from end of rd. into Trinity Wilderness Area, several mi. hike to 6 mi. long ledge—**Rhodonite**.

HAY FORK: ① 15 mi. below the P.O. on the Hay Fork of the Trinity R., area, dark gray—**Barite**; ② Trinity R. gravels—**Gold, Platinum** (nuggets to 2½ oz.).

TRINITY CENTER (old town now submerged beneath Clair Engle Lake), 3 mi. above, the Enright claim—**Gold, Platiniridium**. (This part of Trinity Co. is noted for its immense gold placers of the gold rush era, with active mining continuing up to W W II.)

WEAVERVILLE (Quad.): ① Iron Mt. Dist.—**Epidote, Garnet, Sphe, Zircon**; ② W edge of Co., as a moderately common mineral in area gold ores—**Arsenopyrite**; ③ Helena, N along E Fork and especially Indian Cr., gravels—**Rhodonite**.

TULARE COUNTY

AREA: ① Drum Valley: (a) Consolidated Tungsten Mine—**Calcite crystals** (massive), **Axinite crystals** (to ¾" long), **Scheelite**; (b) on a hill between the valley and

California

Slickrock Canyon—massive **Epidote**, **Garnet**, **Quartz**; ② Eber Flat, large divergent-columnar masses—**Epidote**; ③ Rocky Hill, SE, along a serpentine contact in Quartz-Albite schist, as clusters—**Riebeckite** (needles to ¼" long); ④ Yokohl Valley, NW¼ Sec. 17, T. 18 S, R. 28 E, exposure—**Hornblende** (crystals to 10" long).

EXETER: ① NW, on the D.F. Gassenberger Ranch, in pegmatite—**Allanite** (with **Rose Quartz**); ② NE¼ Sec. 8, T. 18 S, R. 26 E, the Venice Hill mines—**Chrysoprase**, **Opal**, **serpentine**.

LEMONCOVE, N 3 mi., on N side of a ravine 0.3 mi. NE of Kaweah R. and 1 mi. E of Ward Ranch—**quartzite**, **Rhodonite**.

LINDSAY, ESE 1 mi., pits on N end of a low hill—**Chrysoprase**, **opal**, **serpentine**.

MINERAL KING (Dist.), area—**Epidote** (common), **Arsenopyrite** (old mine dumps).

PORTERVILLE: ① S 1½ mi. and E of Plano, area—**chalcedony**, **Chrysoprase**, common **opal**, **serpentine**; ② N 2 mi., at Lewis Hill, in serpentine exposure—**Nephrite Jade** (masses, some of gem quality); ③ E 8 mi. and ½ mi. S of Deer Cr.—**chalcedony**, **Chrysoprase**, common **opal**, **serpentine**; ④ S 11 mi., the Deer Creek silver mine—**Azurite**, **Silver minerals**; ⑤ E 30 mi., on Middle Fork of Tule R. in Sec. 30, T. 19 S, R. 31 E, as exposed masses—**Copper** minerals and native **Copper**.

THREE RIVERS, area, as crystals to 4" long—**Epidote**.

VISALIA, E 8 mi., at S end of Venice Hill—**Satelite** (serpentine).

WHITE RIVER, E 12 mi., the Green Monster Mine—**Scheelite**, **Cupro-tungstite**.

WOODLAKE, Sec. 9, T. 17 S, R. 26 E, in a hornblende gabbro exposure, as crystals to several inches long—**Hornblende**.

TUOLMNE COUNTY

AREA: ① area Mother Lode Gold mines, widespread as a gangue mineral—**Ankerite**; ② Adelaide Mine—**Altaite**; ③ Josephine Mine—**Erythrite**, **Arsenopyrite**; ④ Land Gulch, pegmatite outcrop—**Allanite** (crystals to 6" long); ⑤ Ragged Peak, area pegmatite outcrops, in talus blocks—**Allanite** (crystals to 17" long); ⑥ Sell Mine—**Altaite** (as gray crystals on crystallized **Gold**).

COLUMBIA: ① area—massive **Psilomelane** (with **Pyrolusite**), **Calcite** (showing scarlet triluminescence); ② Sawmill Flat, the Barney Pocket Mine—**Altaite** (crystals cemented to **Gold**).

HORSESHOE BEND, E on slope of ridge—**Bornite** (with **Cinnabar**).

JAMESTOWN: ① S 3 mi., the Mann Copper Mine; ② Oak Hill and Washington mines at Big Oak Flat—**Chalcopyrite**.

SONORA, in the Bonanza and O'Hara mines—**Altaite**.

TUOLUMNE, N 1 mi., pegmatite outcrop—**Spessartite** garnet (crystals to 2").

TUTTLETOWN, the Golden Rule Mine—**Altaite**.

YOSEMITE VALLEY, NW side at foot of Eagle Peak, in talus blocks from a pegmatite, small amounts—**Alunite**.

VENTURA COUNTY

FILLMORE, E 3 mi., at Sulphur Mt., as deposits—**Sulfur**.

FRAZIER MT. (reached from Gorman, Los Angeles Co., on Int. 5 or via Wheeler Springs on Rte. 33 from Ojai): ① area deposits—**Colemanite**; ② Lockwood Valley, N, in Russel and area borax mines—**Howlite**.

OJAI, NE at South Mt., as coatings in crevices of sandstone outcrops—**Boussingaultite**.

TRIUNFO, the Prospect Mine—**Azurite**.

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VENTURA: ① N, along US 101, beach gravels of the Rincon from just N of Ventura to the Santa Barbara Co. line—**Catalina marble** (brecciated, patterned), **silicified marine dinosaur bone** (locally termed Whale Bone); ② Ventura Mine (T. 1 N, R. 18 W) —**Pyrrhotite** (with **Nickel** minerals and **Chalcopyrite**).

YUBA COUNTY

DOBBINS DIST.: ① NW 2 mi., in the Indian Ranch area, the California Mother Lode—**Arsenopyrite**, **Chalcopyrite**, **Tellurides**; ② Red Ravine Mine (Sec. 30, T. 18 N, R. 7 E) —**Gold** and **Sylvanite**.

MARYSVILLE-YUBA CITY, regional gravels of the Feather R., especially upstream toward the Mts.—**Axinite**, **Gold**.

COLORADO

Lying within five natural physiographic provinces, each characterized by its own peculiar geology, Colorado ("Colored Land") is noted for its high mountains in the western half of the state and the Great High Plains of the eastern half. With 51 peaks rising more than 14,000 ft. above sea level, the mean elevation of Colorado is 6,800 ft., the highest of any of America's 50 states. As might be expected, most of the state's extensively developed mining districts occur in the mountainous region west of the 100th meridian. In any gem and mineral collecting visit, altitude and rigorous climatic changes, abrupt even in summer, should be taken into account.

Known as the Centennial, or Silver State, Colorado ranks among the most heavily mineralized regions of the world, although no single mine (other than the Climax Molybdenum Mine at Climax and the Eagle Zinc Mine at Gilman) can really be termed a "Large Operation." Colorado's highly divergent minerals and gemstones are widely distributed in relatively small concentrations which, fortunately for the collector, lie generally on public land. Like Alaska, Colorado is noted primarily for its metallic mineral wealth because of its enormous production of copper, gold, lead, molybdenum, radium, silver, uranium, vanadium and zinc.

While ore minerals built the fortunes of the state, more than 30 varieties of highly prized gems and gemstones (including organic Amber and Jet) occur in the region's mines, stream gravels, high mountain pegmatites, and eastern sedimentaries as float. Colorful specimens of an abundance of crystals and minerals occur on the thousands of mine dumps that dot the mining districts, especially **Azurite**, **Chalcopyrite**, **Galena**, **Sphalerite**, and others intermixed with the common gangue minerals of **Barite**, **Fluorite**, **Quartz** and **Rhodochrosite**.

East of the Rocky Mountain system, occurring almost everywhere as float or as components of the sedimentary Great Plains formations, can be found a wealth of **petrified wood**, **Quartz family gemstones**, crystals of **Calcite** and **Aragonite**, and interesting pseudomorphs after primary minerals. There are literally thousands more gem and mineral collecting locations than can be listed in a single volume, and collectors should be forever on the lookout for other sites known mainly to local specialists and the numerous active rock clubs which hold monthly meetings and periodic shows in all parts of the state.

An excellent recent field reference with plenty of map is *Colorado Rockhounding* by S.M. Voynick.

ADAMS COUNTY

STRASBURG, area deposits along Clear Cr., placer—**Gold**.

ALAMOSA COUNTY

ALAMOSA, S to Antonito, Cumbres Pass hwy., take right bank of river, rd. through Mogote to about 20 mi. above Antonito (hwy. crosses river and the pass), ¼ mi. beyond river, park car and climb a rocky point to a rockslide area—gemmy **lace agate**.

BLANCA (or West Blanca), elev. 10,000 to 14,000 ft., many area mines—**Gold**, **Silver**.

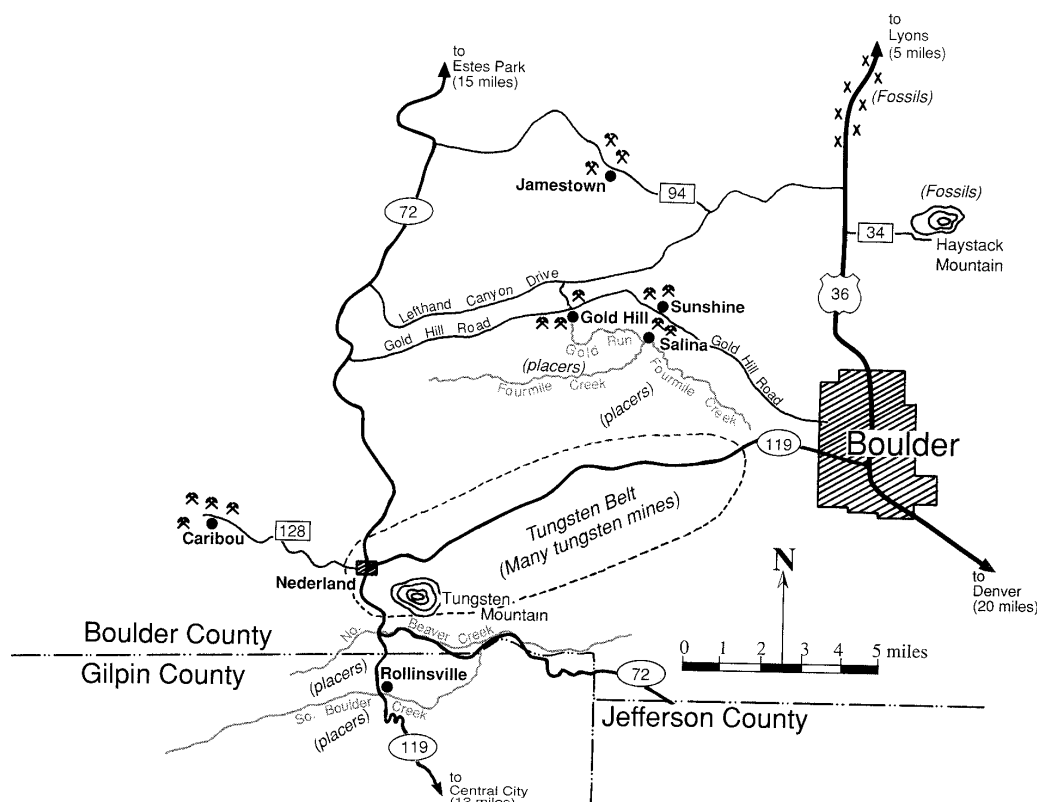
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ARAPAHOE COUNTY

AREA: ① South Platte R. gravels—**Gold**. ② Cherry Cr. and Dry (Cottonwood) Cr., T. 5 S, R. 66 & 67 W; ③ all tributary streams, placers—**Gold**.

BACA COUNTY

SPRINGFIELD, SW 45 mi., at Carizzo Cr. (Estelene), in exposures of a white sandstone—**Gold**, **Chalcopyrite** (partly altered to **Azurite** and **Malachite**).



BOULDER COUNTY

AREA, coal beds of the Laramie formation—**Amber**.

BOULDER: ① W 4 mi., to Arkansas Mt. (extending W for 9 mi. to vicinity of Nederland), noted tungsten mining dist.: (a) Boulder Canyon—**Ferberite** (black, brilliant); (b) Gold Hill dist. (8 mi. NW on Co. rd. 52), the Copper King mine, $\frac{3}{4}$ mi. SW of Gold Hill about 7 mi. NW of Boulder—**sulfide minerals of Gold, Lead, Copper, Silver and Zinc**, (Bravoite, Cobaltite, Garnierite, Morenosite, Pentlandite, Polydymite, Violarite) massive **Fluorite** (fluorescent); (c) Caribou Dist. (6 mi. NW of Nederland on Co. rd. 128), in a quartz vein—**Chalcopyrite, Lead-Silver minerals** (Argentite, Galena, Chlorargyrite, etc.), **Pitchblende, Pyrite**; ② W 7 mi., (a) Magnolia (reached via steep grades), numerous high grade veins—**Gold, Silver**, some **Tungsten**; (b) Sugarloaf, mines—**Gold** (with lead and Copper subordinates), **Zinc**; ③ W, on Rte. 119, Grand Island (Cardinal, Eldora), area mines—**Copper, Gold** (some as a **Telluride**), **Copper, Lead, Silver, Zinc, Cerite, Fluorite** (massive fluorescent).

JAMESTOWN Dist.: ① 2 mi. N. 42° E. of Jamestown, near the north edge of a small stock of Silver Plume granite; ② Dumps just N of town above Co. rd. 94—**Cerite, Allanite**,

Colorado

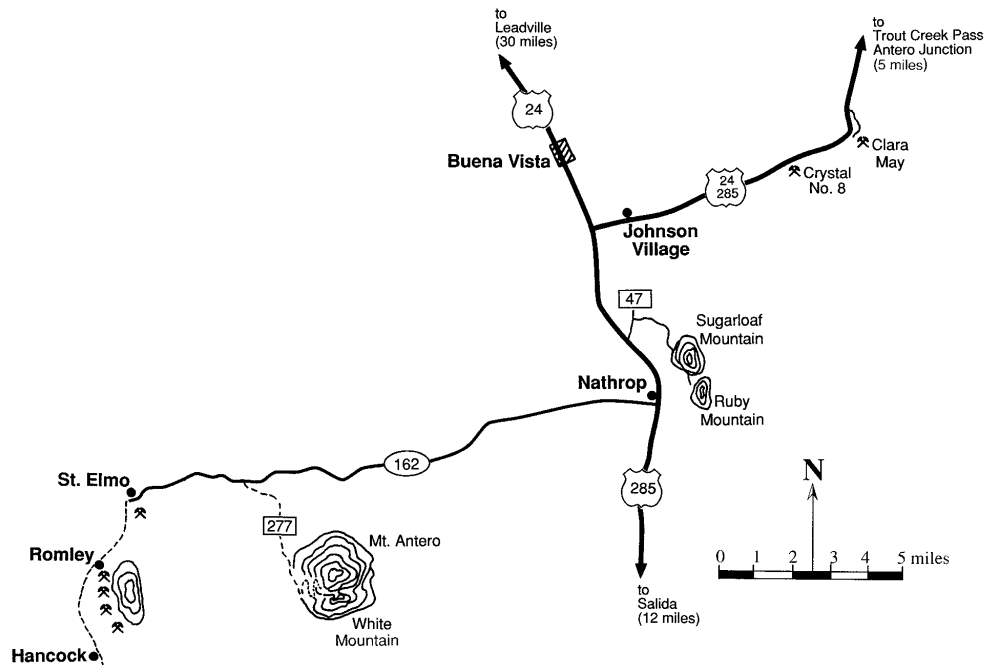
Epidote, Fluorite (purple and white octahedrons w/ small crystals of Pyrite and Galena), **Monazite, Toernebohmite, Uraninite**.

NEDERLAND, N on Rte. 160 toward Ward 3.7 mi., turn E onto Sugarloaf-Sunset rd. to mi. 7, the Oregon Mine (the Tungsten Belt) —gem **Ferberite, Biotite mica, Fluorite Scheelite** (fluorescent) and **sulfide minerals**.

WARD (20 mi. NW of Boulder and 9 mi. N of Nederland), on Rte. 160, area mines—**Gold, Silver** (predominant, with Lead and Copper), low grade **Pyrite**.

CHAFFEE COUNTY

AREA, Arkansas R. gravels (Buena Vista, Salida, Nathrop), along river from Buena Vista SE 25 mi. to Fremont Co. line and near Granite (close to Co. line 15 mi. NW of Salida), many placers—**Gold**.



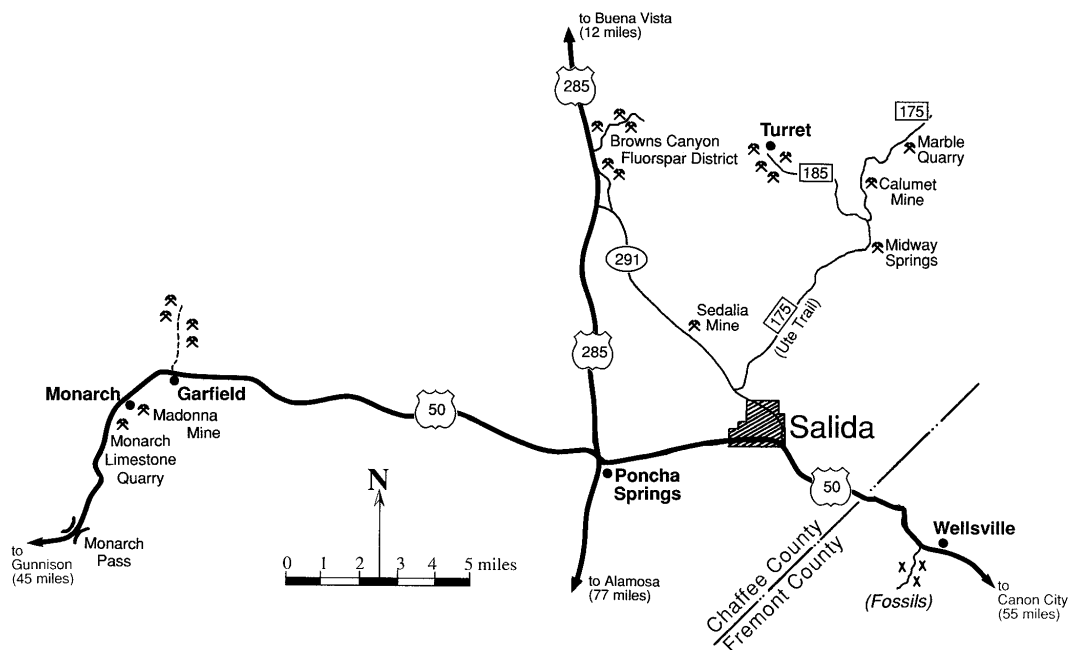
BUENA VISTA: ① Chalk Cr. gravels—**Sapphire**; ② S 2 mi., to US 24: (a) E, to Riverside (6 mi. off US 24, last 2 mi. difficult), alt. 12,000' to 13,000', veins—some **Copper, Gold, Lead, Silver**; (b) E 5.9 mi., turn S on Rte. 53 toward Bassam, left fork to Clara May Mine—**Allanite, Bismuthinite, Bismutite, Euxenite, Garnet, graphic granite** and **Fluorite**; right fork 1.2 mi. to Crystal No. 8 Mine—**Allanite, Biotite, Garnet, Gadolinite, Fluorite, Euxenite, Microcline, Monazite, Rose Quartz** and **Xenotime**; (c) NE 13 mi. and just S to Trout Cr. Pass, mines—**Copper, Gold, Lead, Silver, Zinc**; ③ W 14 mi., Cottonwood, near head of Cottonwood Cr., small veins—**Gold, Lead, Silver**; ④ SE 5 mi., Free Gold, on Trout Cr.—**Gold, Silver**.

GARFIELD-MONARCH (Dist.), alt. 10,000' to 10,500 ft., in T. 49 & 50 N, R. 6 E, mine dumps—**Copper, Gold, Lead, Silver, Zinc**.

GRANITE: ① S 3 mi.: (a) Clear Cr., area mines, and (b) 4 to 10 mi. farther SW, placers—**Gold**; ② T. 11 & 12 S, R. 79 E (with part of dist. in Lake Co.), placers and lode mines—**Gold, Lead, Silver**; ③ W 15 mi., La Plata (Winfield) on Clear Cr., alt. 9,750' to 12,000' (mineralized area 1 to 3 mi. W and SW of Winfield, small veins in Tertiary Twin Lakes porphyry) —**Copper, Lead, Gold**.

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NATHROP: ① across the Arkansas R. in the Ruby Mt. dist. via W 1 mi. on US 285 to NW trending track to the RR bridge: (a) directly across RR, the Dorothy Hill mass; (b) NE from bridge by trail on N side of Arkansas R., Ruby Mt. (directly across river from town), and (c) due N of Dorothy Hill at Sugarloaf Mt., gemmy colorful—**rhyolite, perlite, Apache tears (marekanite, locally called "Black Rubies"), Spessartite** garnet, **Topaz** (yellow to sherry colored), **Sanidine, Feldspar** and **Quartz** crystals; ② S 2 to 3 mi., Browns Cr. (Browns Canyon, near US 285), placers—**Gold**; ③ W 16 mi., Chalk Cr. (T. 15 S, R. 80 & 81 E), the Mary Murphy Mine—**Copper Gold, Lead, Silver, Zinc**; ④ NNW 9.8 mi. via S on US 285 for 3.8 mi., turn N on Rte. 70 for 1½ mi., bear left and N to John Mohr cabins on Mt. Antero (park, take trail 7+ mi. and climb 5,000' to summit), area pegmatite outcrops: (a) mines and pits—gem **Aquamarine, Beryl**; (b) summit (14,000')—**Apatite, Aquamarine, Bertrandite, Beryl, Bismutite (or Phenakite), Brannerite, Calcite, Kryolite, Danburite, Microcline, Fluorite** (white, green, deep purple), **Goethite** pseudomorphs after **Pyrite, Hematite, Ilmenorutile** (massive), **Limonite, Magnetite, Biotite & Muscovite** micas, **Molybdenite, Molybdite, Monazite, Pyrite, Quartz** crystals, **Sericite, Smoky Quartz, Spessartite** garnet, **Sulfur, Topaz**, and **Tourmaline**; (c) saddle of Mt. Antero—**Aquamarine**, common **Beryl** (crystals to 8" long), **Bertrandite** (best quality), **Fluorite, Phenakite**, Clear and Smoky **Quartz** crystals; (d) 2 mi. SW of summit, at foot of Mt. Baldwin, area pegmatites—gem **Beryl**; (e) 5 mi., N of summit on S slopes of Mt. Princeton—**Aquamarine, Beryl, Quartz** crystals; (f) on adjoining White Mt. (connected to Mt. Antero by a ridge), area pegmatites—**Aquamarine, Bertrandite, Beryl, Fluorite, Huebnerite, Molybdenite, Sanidine** crystals, **Smoky Quartz, Phenakite, Topaz** and **Tourmaline**; (g) near head of Browns Cr., dumps of the California Mine—**Beryl** (colorless), **Aquamarine, Ferrimolybdite, Fluorite, Brannerite, Molybdenite, Molybdite, Jarosite, Muscovite, Quartz** crystals, **Rutile, Tourmaline** and **Topaz**.



SALIDA: ① S 4 mi., Cleora (near US 50), mine—**Chalcopryite**; ② W at Monarch Pass: (a) limestone quarry (largest in state)—associated **carbonate minerals**; (b) area mines and dumps—**Beryl, Copper, Corundum, Feldspar, Fluorspar, Gold, Graphite, Iron, Manganese, Rare-earth minerals, Silver, Tungsten, Uranium-Thorium** minerals; ③ take Rte. 190 toward Turret: (a) at ½ mi., park and walk to Saville Queen No. 2 Mine and area prospects—**Beryl, Garnet, Muscovite, Feldspar** and **Quartz** crystals; (b)

Colorado

at 2.9 mi., Turret (near ghost town), area mines, particularly the Combination Mine S of rd.—**Beryl** (blue crystals up to 12" long), **Garnet**, **Biotite**, **Feldspar** and some metallic minerals; ④ N 4 mi., in the Trout Cr. Hills via Rte. 291, to the abandoned Sedalia Copper Mine—**Actinolite**, **Almandite** garnets (gem crystals to large size), **asbestos**, **Azurite**, **Beryl**, **Biotite**, **Cerussite**, **Chalcanthite**, **Chalcocite**, **Chalcopyrite**, **Chrysocolla**, **chrysoprase**, **Corundum**, **Cuprite**, **Epidote**, **Microcline**, **Gahnite** spinel, **Galena**, **Glaucophane**, **Hemimorphite**, **Hornblende**, **Kyanite**, **Limonite**, **Malachite**, **Melanterite**, **Pyrite**, **Quartz** crystals, **Sphalerite**, **Staurolite**, **Tourmaline**, **Willemite**; ⑤ ENE 6 mi., the Rock King prospect, abundant—**graphic granite**; ⑥ N 7 mi., the Combination prospect—**graphic granite**; ⑦ W 8 mi., on E side of Arkansas R. valley, at Sedalia, with ore minerals intimately intergrown with schist minerals—**Chalcopyrite**, **Sphalerite** (with some **Galena** & **Silver** and a little **Gold**); ⑧ NW 10.7 mi. via Rtes. 291, 180, and 190 (in order from town), to the Turret mining dist., jct. to Calumet Iron Mine: (a) on left side of jct., the Rock King Mine—**Beryl**, **Biotite**, **Columbite-Tantalite**, **Feldspar**, **Muscovite** and **Quartz**; (b) at mi. 11, the Homestake Mine (a huge quarry) —**Albite**, **Muscovite**, **Fluorapatite**; (c) at mi. 11.9 the Calumet Iron Mine—**Amphibole**, **Augite**, **Chalcopyrite**, **Corundum**, **Epidote** (crystal 2" long), **Grossularite** garnet (Hessonite), **Magnetite**, **Muscovite**, **Pyrite**, **Quartz** crystals, **sagenite quartz** (crystals to 6" long), **Sapphire**, **Wernerite**; ⑨ N 11 mi., on fair roads, at Turret Cr., area mines—**Chalcopyrite**, **Gold**, **Silver**; ⑩ NNE 16 mi., to Calumet (Whitehorn, Fremont Co.), alt. 9,500' to 10,000': (a) area small mines—**Copper**, **Gold**, **Silver**; (b) Calumet Iron Mine, dumps—**Actinolite**, **Epidote**, **Magnetite**, **Sapphire** (deep blue), **Uralite** amphibole. (While no crystals are visible in the gangue, treatment with HCl will expose some unusual crystal forms since the specimen are about 25% **Calcite**.)

TWIN LAKES, Red Mt., from Continental Divide E to the town P.O. with most mines and prospects above the valley and difficult to reach, alt. 11,000' to 12,000—**Gold**, **Silver**.

CLEAR CREEK COUNTY

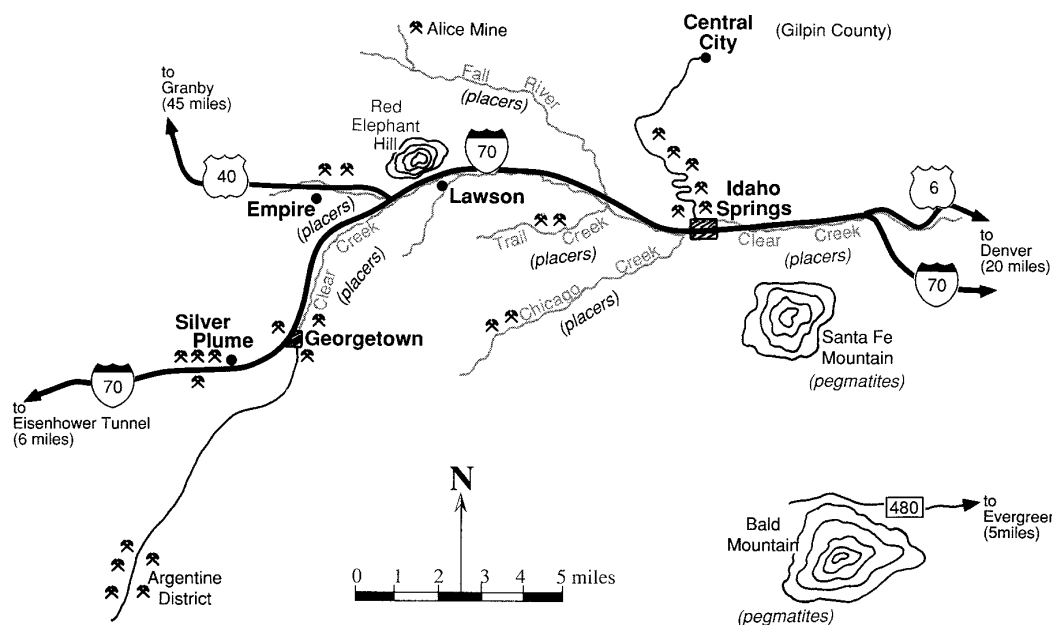
BEAVER BROOK: ① on S bank of Beaver Brook (Sec. 12, T. 4 S, R. 72 W), S from US 40 at the E foot of Floyd Hill and follow the road up Beaver Brook about ¼ mi. to school, pegmatite on opposite side of Cr. from school—**Allanite**, **Amazonite**, **Beryl**, **Gadolinite**, **Garnet**, **Monazite**, **Topaz**, **Zircon**; ② the Floyd Hill pegmatite bodies: (a) Sec. 12, T. 4 S, R. 72 W) close to the N side of US 40, at E foot of Floyd Hill and a few hundreds ft. W of Clear Creek - Jefferson Co. line—**Beryl Titanite**, **Muscovite**; (b) SE¼ Sec. 34, T. 3 S, R. 72 W, on US 6, in coarse granite about 1 mi. E of jct. with US 40—**Allanite**, **Titanite**, **Muscovite**; ③ Grover Mine at corner of Sec. 9, 10, 15, & 16, T. 4 S, R. 72 W, at top of small ridge on N side of the Beaver Brook, via Hwy. 40 to rd. up Beaver Brook, in the Grover pegmatite—**Bertrandite**, **Beryl**, **Columbite**, **Monazite**, **Muscovite**.

DAILEY (Atlantic), near head of W Fork of Clear Cr. and Butler Gulch, 2 mi. E and SE of Jones Pass, area small mines—**Lead**, some **Silver** and **Zinc**.

EMPIRE (Upper Union), on US 40 and 41 mi. W of Denver, with main veins 1½ mi. N of Empire on good roads—**Gold**.

GEORGETOWN-SILVER PLUME-QUEENS (Griffith), on US 6 and 40 to 42 mi. W of Denver, local steep grades: ① area mines—**complex sulfides**, varying from **Gold-Lead-Silver** ores to **Lead-Silver-Zinc** minerals (gold subordinate, some copper); ② S 2 mi., the Argentine (West Argentine) Dist., including mines along Leavenworth Cr. and on SE side of Leavenworth Mt. (also on SE slope of McClellan Mt. at head of Leavenworth Cr. 6 mi. farther SW), mines—**Lead-Silver** minerals, **Gold**, some **Copper** & **Zinc**.

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IDAHO SPRINGS: ① mines at Cascade, Coral, Jackson Bar, Paynes Bar, Spanish Bar, Virginia Canyon, via good roads, wide variety of colorful ore types—**Gold-Silver-Lead-Copper** ores predominating; ② NW 2 mi., along Trail Cr., gravels—**Amethyst**; ③ NW 2½ mi., at Trail (Freeland, Lamartine), on Trail Cr. with the Lamartine Mine 2 mi. SW on divide between Trail Cr. and Ute Cr., good road 2 to 4 mi. from US 40 and 6—**Gold, Silver, Lead, Zinc** minerals; ④ W 6 mi., gravels of Silver Cr.—**Amethyst**; ⑤ NW 10 mi. (2 mi. on US 40 and 8 mi. on Rte. 285), to Alice (Lincoln, Yankee Hill, alt. 10,000' to 11,000 ft.), lode mines—**Lead, Gold, Zinc**; ⑥ Montana (Lawson, Dumont, Downieville), the W extension of the dist. on US 6 and 40 (38 mi. W of Denver), area mines—**Gold, Lead, Silver**; ⑦ at Moose Mine, take Virginia Canyon rd. to Russel Gulch rd. and to Willis Gulch, mine is ½ mile below head of gulch—**Rhodochrosite**; ⑧ in pegmatite at Santa Fe Mt. prospect, 3 mi. SE on ridge NE of mt., and reached by rd. up Sawmill Gulch from US 6—**Rose Quartz** and **Beryl**, black **Tourmaline**, **Garnets**, **Lepidolite**; ⑨ McManus Gulch (Sec. 5, T. 4 S, R. 72 W), 2 mi. E, just S of Gem Power Plant, walk up gulch about ¾ mi., then up steep trail on E side of gulch, A calcium Silicate body exposed halfway up the hill a short distance W of trail—**Calcite**, **Grossularite**, **Hornblende**, **Vesuvianite**.

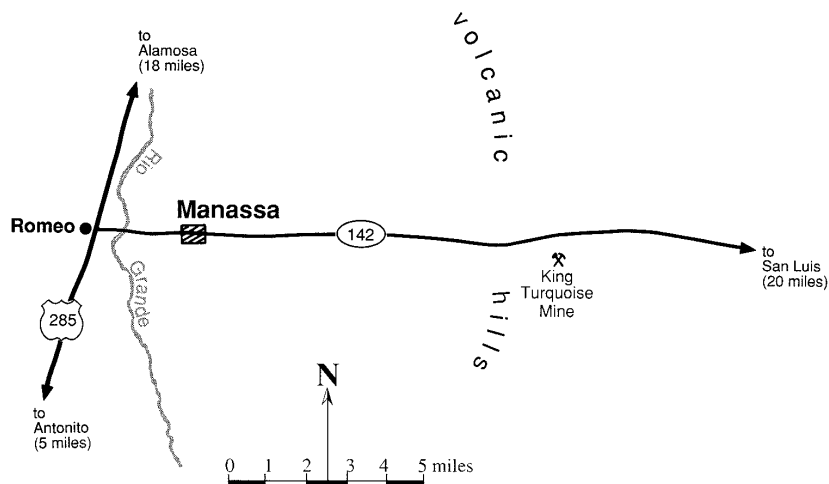
LAWSON-DRUMMOND Dist., Red Elephant Mt., area—**Amethyst**.

CONEJOS COUNTY

MANASSA, E 10 mi. (13 mi. ESE of La Jara), and 1½ mi. W of the Rio Grande R., the King Mine on Pinon Mt. (see map next page)—**kaolin, Quartz, Sericite, Turquoise**.

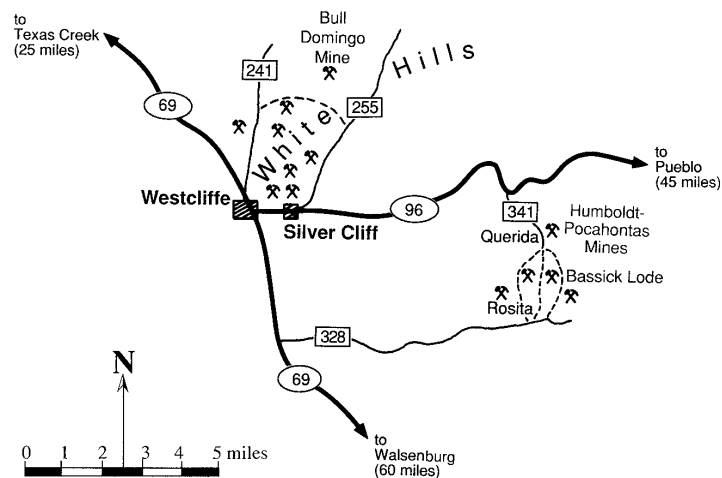
PLATORO (W from La Jara via Rte. 15), the Axel, Gilmore, Lake Fork, Ute, and Stunner Dists., many area mines—**Gold, Silver**.

Colorado



COSTILLA COUNTY

SAN LUIS, NE 7 mi. to Plomo (Rito Seco) on Rito Seco Cr.—**Gold, Pyrite** (in Quartz).



CUSTER COUNTY

SILVER CLIFF-WESTCLIFFE, Hardscrabble dist. of relatively small but high-grade veins: ① area mines—**Gold, Lead, Silver, Zinc**; ② NE, to Oak Cr. (Ilse, Spaulding), on Rte. 143 about 16 mi. SW of Florence (Fremont Co.), area mines—**Cerussite**, some **Silver**; ③ E 14 mi. on Rte. 96 and 2 mi. on local rd. to Rosita Hills (Rosita, Querida), in veins and pipes—**Copper, Gold, Silver**; ④ the White Hills mine dumps N of Silver Cliffs—**Galena, Sphalerite, Azurite, Malachite, Cerussite, Argentite, Chlorargyrite**.

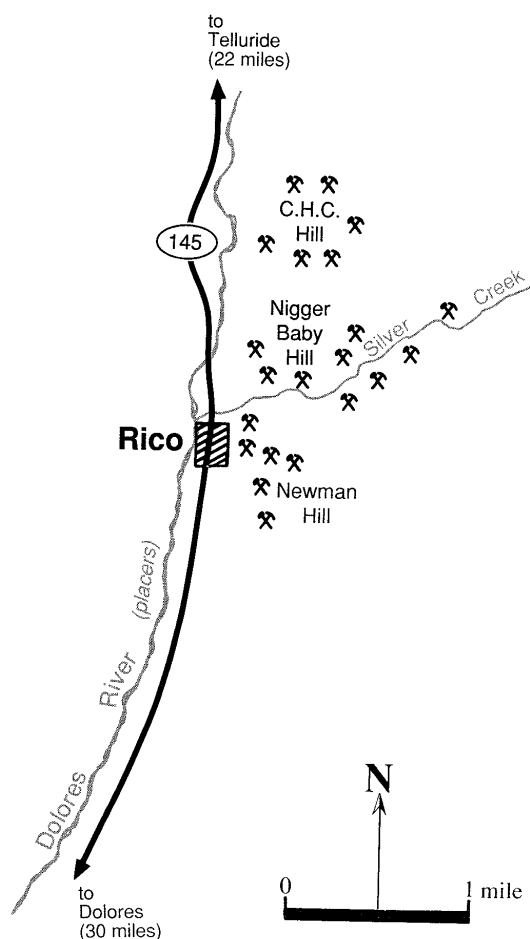
DELTA COUNTY

AREA, Gunnison Forks sulfur deposit, 14.4 mi. E of Delta and $\frac{1}{2}$ mi. S of Hwy. 92—**Gypsum, Marcasite, Pickeringite, K-alum, Sulfur.**

DOLORES COUNTY

OPHIR, the San Juan Mts. (a triangle between Ouray in Ouray Co., Silverton in San Juan Co., and Ophir, E to the Hinsdale Co. line, a mountainous region of hundreds of old mines, prospects, and abandoned dumps with a varied assortment of minerals—**Copper, Gold, Lead, Silver, Manganese, Tungsten, Pyrite**, etc. (Access roads are usually steep and rough; make local inquiry).

RICO: ① mines on Rte. 145 and 36 mi. NE of Dolores and 27 mi. S of Telluride—**Argentite, Argentiferous Tetrahedrite, Chalcopyrite, Galena, Pyrite, Quartz** crystals, **Rhodochrosite, Sphalerite**; also ② NW 16 mi. at Lone Cone (Dunton) on W. Dolores R. on Rte. 331, and ③ Newman Hill and Enterprise mines.



DOUGLAS COUNTY

DECKERS, E 7 mi., in Sec. 21, T. 9 S, R. 69 W, the Devils Head prospect—**Amazonite, Fluorite, Goethite, Hematite, Topaz.**

FRANKTOWN: ① Cherry Cr. (from town extending several mi. N), and ② NW 4 to 5 mi., on Lemon Cr., area placers—**Gold**; ③ S 1 mi., Russelville Gulch (tributary of Cherry Cr.), extending along gulch for 3 mi., placer—**Gold.**

LARKSPUR, area, as float—**jasper.**

LOUVIERS, along Dry Cr. (tributary of the South Platte R.), in deposits extending NE into Arapaho Co., placer—**Gold.**

PALMER LAKE, NW 10 mi., Front Range foothills, area—**alabaster, Gypsum, Satin Spar.**

PARKER: ① S 1 mi., area float—**petrified wood**; ② NW $1\frac{1}{2}$ mi. on Rte. 83: (a) Newlin Gulch, and (b) NW of Newlin Cr. in Happy Canyon, as microscopic grains to pinhead nuggets, placer—**Gold.**

SEDALIA: ① W 10.2 mi. on Rte. 67 (Jarre Canyon rd.), turn left on Rampart Range rd. and keep right to : (a) mi. 20.8 to C.M.S. Topaz Claim (Devils Head), numerous area prospects—**Allanite, Amethyst, Cassiterite, Cyrtolite, Gadolinite, Feldspar & Microcline, Fluorite, Samarskite, Smoky Quartz** crystals and **Topaz**; (b) S of summit on top of a ridge below main access rd.—**Cassiterite, Microcline, Fluorite, Hematite, Limonite, Smoky Quartz** crystals and **Topaz**; (c) mi. 21.4, White Quartz Mt., area on both sides of rd. for $\frac{1}{2}$ mi.—Clear and Smoky **Quartz**; (d) regional stream beds and gullies—various **gemstone** crystals; (e) Mi. 26.2, on Bergen Rd., at Long Hollow, area—

Colorado

large **Smoky Quartz** crystals, gem **Topaz** crystals (to 2' long); ② W 11 mi., Pine Cr., pegmatite outcrops—**Amazonite** and **Smoky Quartz** crystals; ③ W 13.7 mi. on Rte. 67, to Sprucewood Inn jct., the 2 mi. up mine rd. to mines, tunnel, dumps of the Pine Cr. area—**Feldspar**, **Amazonite**, **Cassiterite**, **Fluorite** (cubes to 3" on edges), clear and Smoky **Quartz** crystals.

EAGLE COUNTY

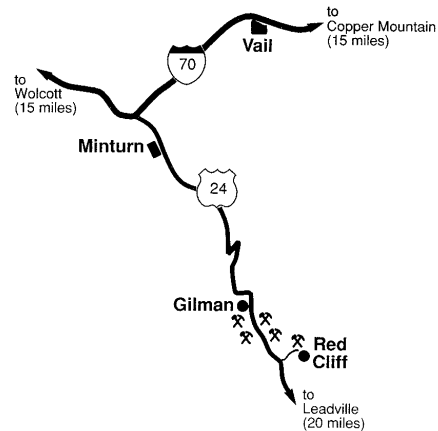
EAGLE: ① W 1 mi. on US 24 and 6 to 8 mi. up Brush Cr. on rd. to Fulford, area mines—**Cerargyrite**, **Azurite** & **Malachite** (locally staining sandstone), traces of **Uranium** and **Vanadium**; ② SSE 20 mi. to Fulford, head of Brush Cr., area mines—**Lead-Silver** minerals.

GILMAN, the Eagle Mine (fourth largest zinc mine in America) —**Copper**, **Lead**, **Silver**, **Zinc**.

MCCOY, W along Colorado R., bench gravels, placer—**Gold**.

MINTURN, SW 10 mi., Holy Cross (Eagle R.), at head of Cross Cr., spotty high-grade ore deposits—**Gold**, **Lead** (some) and **Silver**.

REDCLIFF: ① Homestake Cr., area mines—**Gold**, **Lead**, **Silver**, **Zinc**; ② Battle Mt., Belden, area mines to Gilman—**Barite**, **Auriferous sideritic sulfide** Bodies (mantos), **Chalcopyrite**, **Galena**, **Gold-Silver Tellurides**, **Marmatite**, **Manganosiderite**, **Pyrite**, **pyritic Gold**, **pyritic Copper-Silver** ores, **Zinc sulfide** mantos along with various complex sulfides.



ELBERT COUNTY

AREA: ① Bijou and Kiowa Cr. gravels—**petrified wood**; ② Platte R. gravels, especially SE of Elbert—**opalized** and **silicified wood**.

AGATE, surrounding region, abundant—**agate**, **jasper**, **petrified wood**.

ELBERT, SE a short distance, abundant logs—**agatized** and **opalized wood**.

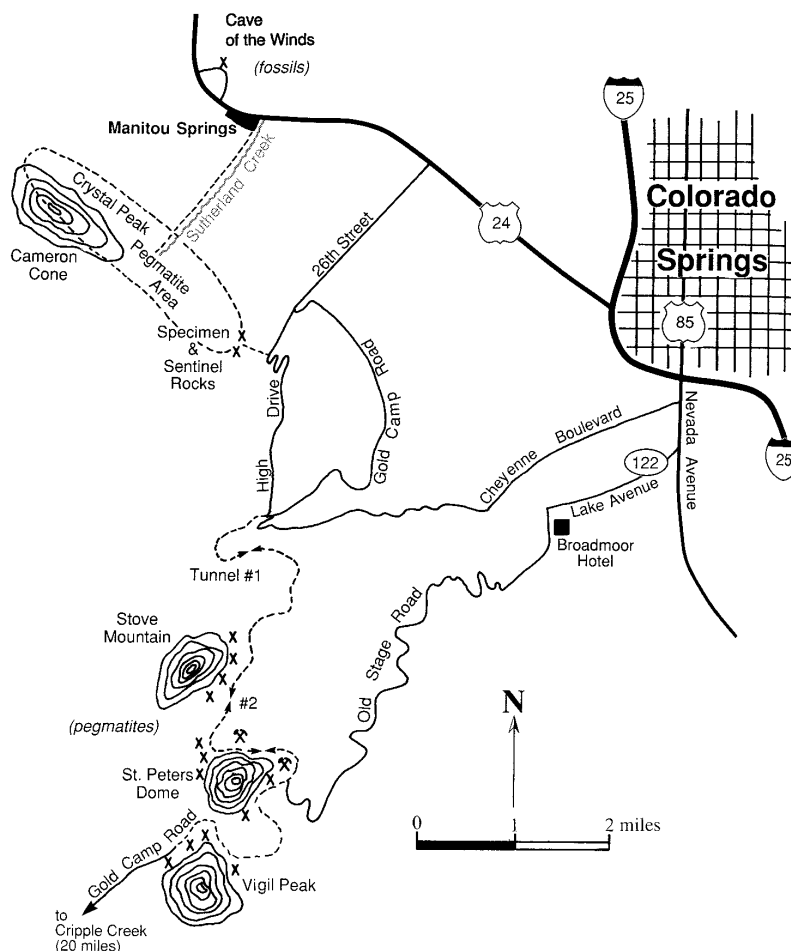
ELIZABETH: ① W and NW 1 to 1½ mi., Gold Cr. (on Ronk Cr.), on Rte. 86 about 40 mi. SE of Denver, placer—**Gold**; ② at Kit Carson Monument—**petrified wood**.

EL PASO COUNTY

AREA, regional coal mines in the Laramie formation—**jet**.

CALHAN: ① all surrounding area—**Amazonite**, **Quartz** gemstones, **petrified wood** and **Selenite**; ② E 3.4 mi. (US 24 for 0.4 mi., turn S on paved rd. and 1 mi. turn E onto Paint Mine rd.), to Paint Mines: (a) area washes, gullies, surfaces—**agate**, **Amazonite**, **jasper**, **Quartz crystals**, **Selenite**; (b) S of the mine dumps—**agate**, etc. Throughout much of eastern Colorado, in a zone 150 mi. broad, are found **petrified woods** of gem quality and **fossils**.

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COLORADO SPRINGS: ① NE 4 mi. at Austin Bluffs, area—**agate**, **carnelian**, **chalcedony**, **jasper**; ② Eureka Tunnel (NE of rd. summit between city and Rosemont, on lower side of rd.)—**Zircon**; ③ NW 6 mi., at Blair Athol in the foothills, placer—**Gold**; ④ Sentinel Rock and Specimen Rock W off High Dr.—**Amazonite**, green **Fluorite**, **Goethite**, **Hematite**, **Quartz** crystals; ⑤ SW 7 mi., the St. Peter's Dome Dist. via Gold Camp rd., take Rte. 33 SW toward Cripple Creek to jct. of Gold Camp rd. and High Drive: (a) W 0.3 mi., across canyon, old tunnel and dump—**Zircon** (to 2" long); (b) W 0.6 mi., hillside above rd.—Clear and Smoky **Quartz**, **Hematite** pseudomorphs after Siderite; (c) at 2.4 mi., Fairview RR sta., area both sides of rd.—**Bastnaesite**, **Fluocerite** (*Tysonite*), **Fluorite**, **Quartz** crystals; (d) at 2.9 mi., climb low ridge to N to Cook Stove Mt. and another ¼ mi. to Buffalo Cr., area gravels and hillsides—**Amazonite**, **Smoky Quartz**, **Bastnaesite**, **Fergusonite**, **Fluocerite**, **Fluorite**, **Genthelvite**, **Lanthanite**, **Phenakite**, **Topaz** and **Zircon**; (e) S of Cook Stove Mt. area—**Amazonite**, **Smoky Quartz**, **Topaz**; (f) W 5.8 mi., just before the third tunnel, old dump downslope from a cement building, on USFS access rd.—**Columbite**, **Kryolite** (pink, pale green, translucent), **Microcline**, milky **Quartz**, **Pachnolite**, **Prosopite**, **Fluorite**; (g) on right 0.3 mi., the Eureka Tunnel—**Zircon**; (h) on through the third tunnel to mi. 6.1 to the Eureka Tunnel, on left side of stream about 400' below rd.—gem **Zircon**; (i) at mi. 6.6 park and walk on USFS access rd., keeping right at first fork, many area prospect pits—**Astrophyllite**, **Riebeckite**, **Zircon**; (j) at mi. 9.1 (jct. of Rte. 336 & 122) and at mi. 10, the Duffield L.O. at base of St. Peter's Dome, walk 0.3 mi. to Duffield Fluorspar Mine—**Barite**, **Galena**, **Fluorite**, **Sphalerite**.

The prolific St. Peter's Dome Dist. provides not only gemmy minerals, such as **Allanite**, **Apatite**, **Feldspar** (pink Microcline-perthite and Oligoclase), **Magnetite**, **Sphene**

Colorado

and Zircon, but also a variety of colorful and interesting gangue minerals, such as **Fluorite** with **Chalcopyrite**, **Galena**, **Sphalerite**, **Pyrite**, **Quartz**, **chalcedony**, some **Gold** and **Silver**, pink **Barite**, specular **Hematite**. Also found are some rare fluorine minerals such as **Bastnaesite**, **Elpasolite**, **Fluocerite**, **Prosopite**, **Ralstonite** and **Thomsenolite**. Still rarer minerals include **Astrophyllite**, **Cassiterite**, **Chlorite**, **Columbite**, **Fayalite**, **Fergusonite**, **Genthelvite** (*Danalite*), **Pyrochlore**, **Riebeckite**, **Rutile** and **Xenotime**.

MANITOU SPRINGS, SW 2 mi., at base of Cameron Cone: ① Crystal Park, and ② around bases of Mt. Arthur and Mt. Garfield, area pegmatites—**Amazonite**, **Columbite**, **Feldspars**, **Fluorite**, **Hematite** (in quartz as pseudomorphs after Siderite), **Hornblende**, **Biotite** and **Muscovite** micas, **Phenakite**, **Topaz** (blue, pinkish, to several inches long), black **Tourmaline** (enclosed in quartz), and **Zircon** (rare).

PEYTON: ① area of E half of Co.—gem petrified wood; ② the Bijou Basin, noted locality—**agatized** and **jasperized wood**.

FREMONT COUNTY

AREA, gravels of the Arkansas R., from Chaffee Co. line downstream to Florence, many placer—**Gold**.

BADGER CREEK (8 mi. SE of Salida in Chaffee Co.), with deposits 4 mi. N up Cr., placers—**Gold** (with some copper minerals).

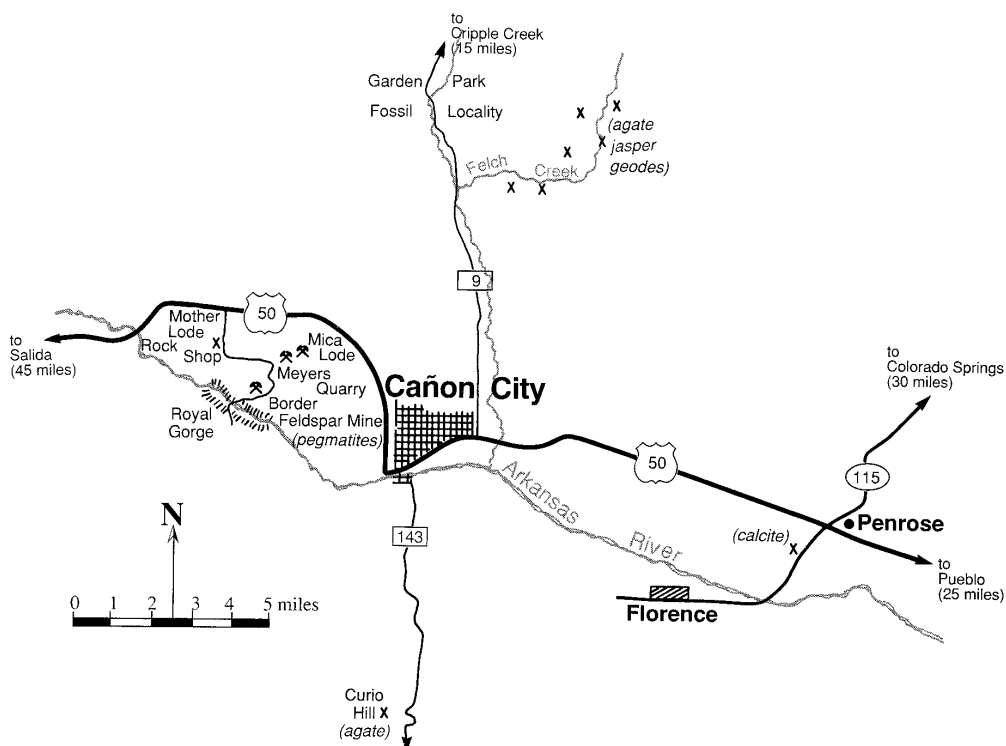
CANON CITY: ① area, Colorado State Penitentiary (call for permission to dig), section along Skyline Dr.—**Calcite**, **fossils** (Sharks teeth); ② N 4 mi. on US 50, gate to the Cowan Quarries (go 2.3 mi. inside) —gemmy **Travertine**; ③ NW 4 mi. and ½ mi. S of US 50, in Sec. 14, T. 18 S, R. 71 W, area—**Microcline**, **Quartz**; ④ N 4.4 mi., area of city dump—**Barite** (brown crystals), **Calcite** (white crystals), **septarian nodules**; ⑤ NW 6 mi. and 1 mi. N of US 50, the School Section Mine (Sec. 16, T. 18 S, R. 71 W) —**graphic granite**; ⑥ S 7 mi., Curio Hill—gem **agate**; ⑦ N 6½ mi., Felch Cr., area—**agate nodules**, **chalcedony**, **geodes**, **jasper**; ⑧ N 7 mi., Gardin park, area—**agate**, **chalcedony**, **silicified dinosaur bone**; ⑨ N 8.2 mi. at S end of Gardin park Dinosaur Monument, area—**agate**, **jasperized dinosaur bone**, **Calcite**, **Cephalopods**; ⑩ N 9.8 mi., to Felch Cr., area badlands—gem **agate**, **alabaster nodules**, **geodes** (containing crystals of **Barite**, **Calcite**, **Celestite**, **Goethite**, **Quartz**), **Gypsum**, gem **jasper**, **jasperized dinosaur bone**, **Millerite**, **Satin Spar**, **Selenite**; ⑪ NNE 10 mi., on W side of Eight Mile Cr., at Phantom Canyon beryl prospect—**Beryl** (Area is difficult to reach by road. Requires 2 mi. by trail that turns of Rte. 67 about 2 mi. S of Adelaide.); ⑫ NW 12 mi. and 1 mi. S of Twelvemile park, area—**Amethyst**, **Quartz** crystals; ⑬ W 13 mi. on US 50 Currant Cr. (Parkdale, Micanite), with mineralized area 8 mi. to N on creek, mines—**Copper**, **Gold**, **Lead**, **Silver**, **Zinc**; ⑭ NW 24 mi., the Climax Mica Mine (about 3,700' NE of the ghost town of Micanite with mine about 600' S of Park-Fremont C. line) —**Muscovite**, **graphic granite**.

COALDALE, E 1 mi., on bank of the Arkansas R. (Sec 24, T. 48 N, R. 11 E), the McCoy prospects—**graphic granite**.

COTOPAXI: ① N 4 mi., feldspar prospect (Sec. 8, T. 48 N, R. 12 E, 25 mi. E of Salida) —**Feldspar**, **Amphibole**, **Chalcopyrite**, **Gahnite**, **Garnet**, **Samarskite**, **Sphalerite**, **Uraninite** and **graphic granite**; ② N 9 mi. on US 40 to Red Gulch (24 mi. SE of Salida in Chaffee Co.), area mines—**Chalcocite**, some **Silver**.

PENROSE, S 1½ mi. on Rte. 115, area small gullies and valleys—**Calcite** crystals (to 4" long).

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ROYAL GORGE: ① area—**Aquamarine, Beryl, Tourmaline**; ② S 1.3 mi. toward Buckskin Joe, the School Section Mine—**Apatite, Beryl, Beyerite, Bismutite, Chalcopyrite, Columbite, Muscovite** and **Biotite** micas, **Microcline, Garnet**, black **Tourmaline, Triplite**; ③ S 2.2 mi., quarry and Van Buskirk Mine—blue **Apatite, Microcline, Garnet, Biotite** and black **Tourmaline**; ④ S 2.8 mi.: (a) Meyers Quarry—**Andradite** garnet, **Beryl, Beyerite, Cleavelandite, Lepidolite, Muscovite, Tourmaline** (pink, black), **Triplite**; (b) Mica Lode Mine (second huge quarry of main rd.)—**Azurite, Beryl** (crystals to 6' long), **Chalcocite, Chrysocolla, Garnets** (Andradite, Spessartite, Uvarovite), **Muscovite, Rose Quartz, Tourmaline** (pink, black), **Triplite, Bismutite**; ⑤ S of the Mica Lode Mine, on high hill, the Magnuson Mine—**Beryl** (greenish, yellow), **Feldspar**; ⑥ at entrance to the Mica Lode Mine, turn right for 0.3 mi. across uphill field to Border Feldspar No. 2 Mine—**Quartz** crystals, **Tourmaline**; ⑦ Royal Gorge park, area of exposed pegmatites on both side of the gorge: (a) N side, known as Eight Mile Park, and (b) S side, as Webster park—**Andesite, Azurite, Beryl, Beyerite, native Bismuth, Bismutite, Calcite, Cerussite, chalcodony, Chalcocite, Chlorite, Chrysocolla, Cleavelandite, Columbite-Tantalite, Covellite, Euxenite, Feldspar, Fluorapatite, Garnet, Hematite, Magnetite, Malachite, Manganese minerals, Micas, Monazite, Montebbrasite, Natromontebbrasite, Quartz, Silver, Torbernite, Tourmaline, Tripolite**.

TEXAS CREEK: ① N 6 mi. on gravel rd.: (a) the Devils Hole Mine—**Aquamarine, Columbite-Tantalite, Microcline, Mica, Rose Quartz**. This pegmatite mine, as well as others area pegmatite outcrops, produces Microcline feldspar crystals in enormous size, pale pink in color (albite) or mica books have measured 5' in dia. (b) 0.3 mi. W of Echo Canyon-East Gulch jct., area—**Rose Quartz**; ② N 6½ mi., the Amazon claim in East Gulch—**Beryl**.

WELLSVILLE, 3 mi. up Taylor Gulch, huge deposit and quarry—gemmy **Travertine, fossils**.

WHITEHORN (a dist. E of and continuous with the Calumet Dist. of Chaffee Co.), area mines—**Gold, Silver**, etc.

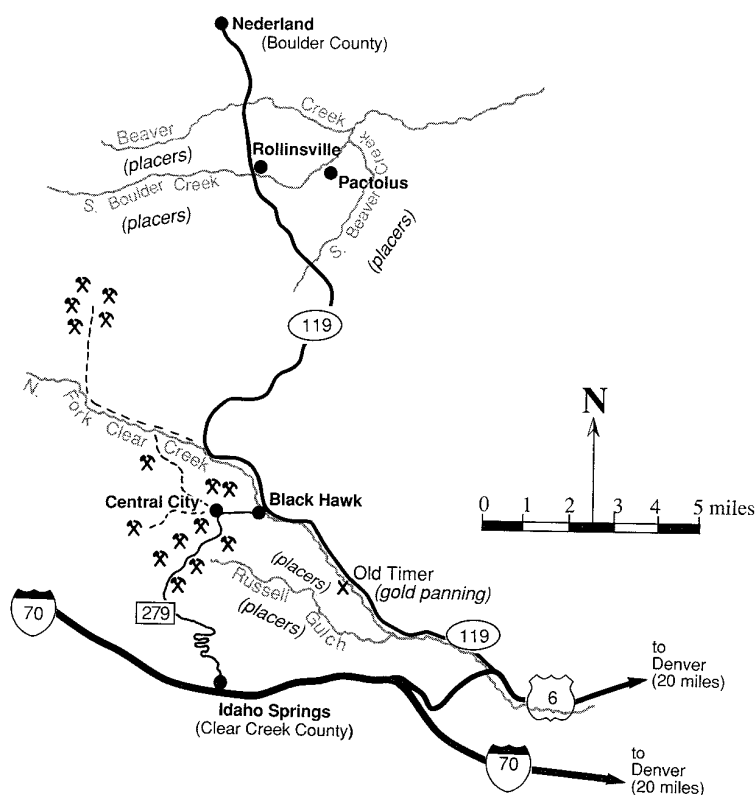
Colorado

GARFIELD COUNTY

GLENWOOD SPRINGS, NEWCASTLE, N on dumps of old mines on Riffle and Elk Crs. and on S flank of the White River Plateau (an almost inaccessible area today)—**Galena, Gold, Lead-Silver** ores, **Sphalerite**.

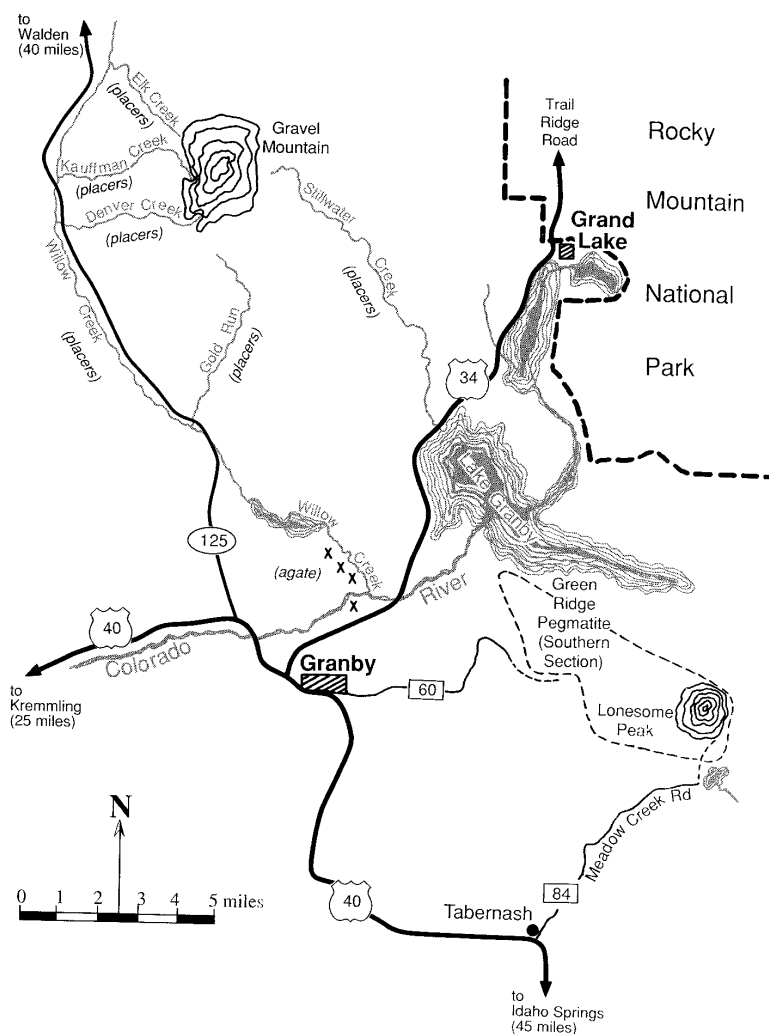
GILPIN COUNTY

AREA: ① northern dists. (Perigo, Independence, Pine-Kingston-Apex), covering half a Twp. 20 to 25 mi. SW of Boulder (Boulder Co.) and 50 to 60 mi. NW of Denver, with good access rds., many mines—**Gold, Silver** predominant, some **Lead** and **Zinc** minerals; ② southern dists. (Central, Nevada, Gregory, Russel, Quartz Mt.), scattered throughout Twp. 40 to 50 mi. W of Denver and SW of Boulder, many mines—**Chalcopryite, Bornite, Gold, Pyrite, Silver**.



CENTRAL CITY: ① East End Mine—**moss agate, Labradorite**; ② SW 2.1 mi. on Rte. 279 pass Russel Gulch (ghost camp), area old dumps—**Pyrite** cubes (to 1" dia.); ③ right, on Rte 279 (unmarked), then right fork at mi. 3.2, area sloped—**Magnetite**; ④ at mi. 3.8, the Gloryhole (enormous open pit with dangerous rim)—**Chalcopryite**, native **Copper, Galena, Gold, Magnetite, Pyrite** cubes and **Quartz** crystal (doubly terminated), **Tennantite**; ⑤ rd. to ghost town of Apex: (a) at mi. 3, area—**Magnetite**; (b) at mi. 6.7, cross Pine Cr., rd leads to Evergreen Mine dumps—**Azurite, Bornite, Calcite, Chalcocite, Chalcopryite, Chrysocolla, Covellite, Cuprite, Enargite, Galena,, Garnet, specular Hematite, Malachite, Pyrite, Sphalerite, Sphene, Wollastonite, Zircon**.

A Location Guide for Rock Hounds in the United States



GRAND COUNTY

AREA, Middle Park—**moss agate, chalcedony, chrysoprase.**

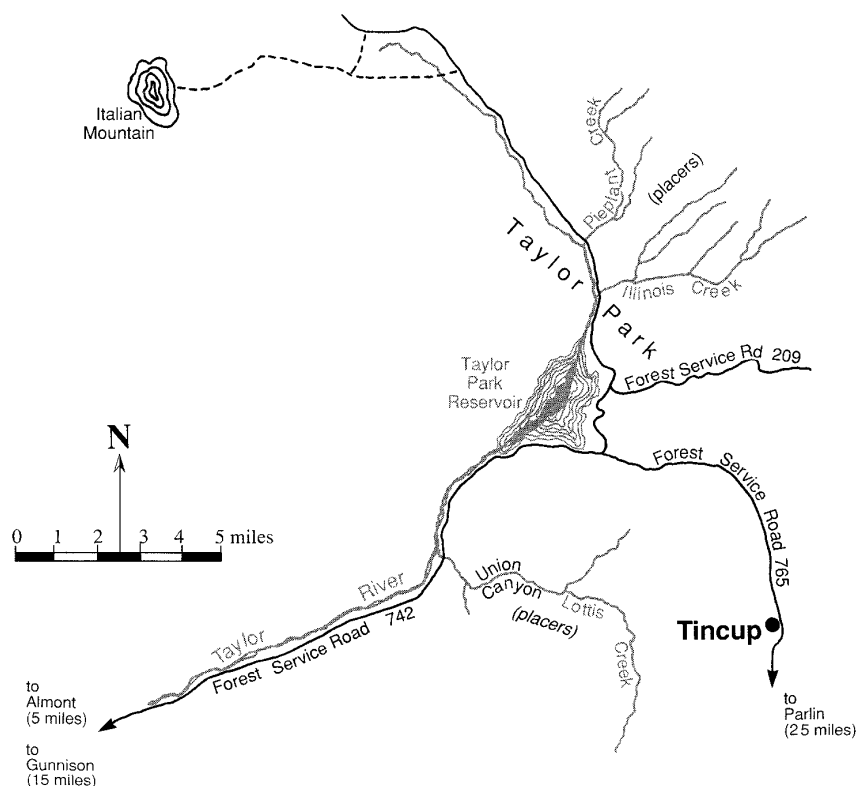
GRAND LAKE (Wolverine), E 7 mi. on Rte. 278, mines—**Gold-Lead-Silver** ores.

GRANDBY: ① on ridges in Middle park near jct. of Willow Cr. and Colorado R.—**bloodstone**; ② Green Ridge pegmatite (S of Granby Lake), take US 40 from Granby 8 mi. S to Tabernash, follow Co. rd 84 (Meadow Cr. rd.) E for 6 mi. to Meadow Cr. Reservoir. Lonesome Peak 2 mi. to N.—**Quartz, Feldspar, black Tourmaline, Mica.**

HOT SULPHUR SPRINGS, NW on Willow Cr., area—**moss agate, chalcedony, fossil wood.**

PARSHALL: ① jct. of William Fork with Colorado R.: (a) area—**jasper**; (b) 2 mi. up Williams Fork, area—**moss agate**; ② S, to head of Williams Fork, the La Plata Dist. extending a few miles SE across the Continental Divide (Jones Pass) into headwaters of the West Fork of Clear Cr. (Clear Creek Co.), in iron-stained veins—**Pyrite, Lead, some Gold** locally, **Silver, Zinc.**

Colorado



GUNNISON COUNTY

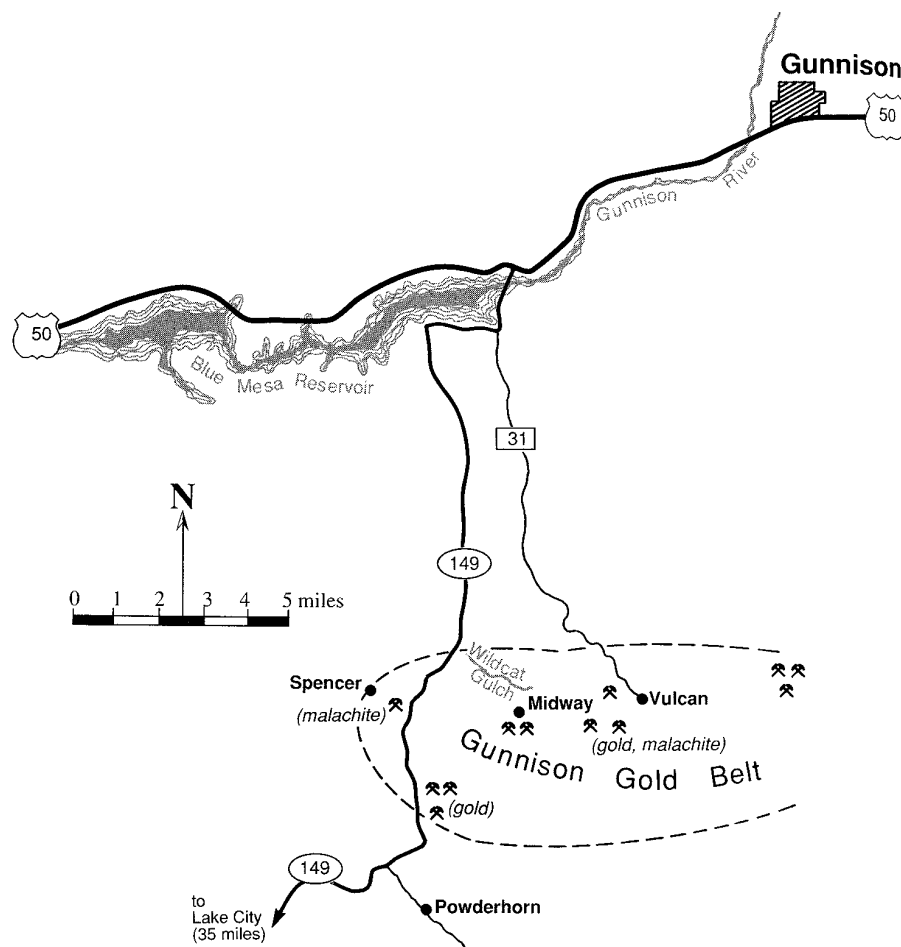
AREA: ① Italian Mt.: (a) W side, area—**Lapis Lazuli**; (b) via Hwy. 135 (the Gothic rd.) 19 mi. to the mouth of Cement Cr., 12 mi. up Cement Cr. on poor rd.—**Adularia, Albite, Ankerite, Anorthite, Chabazite, Chlorite, Diopside, Epidote, Fluorapatite, Garnet, Graphite, Heulandite, Lazurite, Magnetite, Mizzonite, Sahlite, Scolecite, Stilbite, Talc, Thomsonite, Titanite, Vesuvianite** and **Wollastonite**. (Metamorphic minerals are abundant in a tactite zone around two bodies of intrusive quartz.) ② Mt. Beckwith, area—**moonstone**.

ALMONT (on Rte. 306), NE 7 mi., in Spring Cr. Canyon, mines—**Lead-Silver-Gold** ores.

CRESTED BUTTE: ① NW 10 mi. and a few mi. N of Rte. 135, rich ores—**Ruby-Silver**; ② N 22 mi., at Elk Mt., alt. 9,500' to 11,000' (including ghost town of Gothic), mines—**Chalcopyrite** (with Gold and Silver), **Galena, Sphalerite**. (Mineralization is widespread, but veins area small and irregular.)

GUNNISON: ① N, on W side of North Italian Mt., area metamorphic contact zone—**Grossularite** garnet and other **metamorphic minerals, Lapis Lazuli**; ② E 13 mi., at Gold Brick (4 to 6 mi. N of Ohio, alt. 9,000' to 10,000', relatively rich veins—**Gold-Lead-Silver** ores. (The productive veins are concentrated just E of Gold Cr. in an area 4 mi. long by 1 mi. wide.) ③ Gunnison Gold Belt Mines, in mineralized zone twenty by six mi. SW of town off Hwy. 149 (see map next page)—**Gold** and **Copper** minerals.

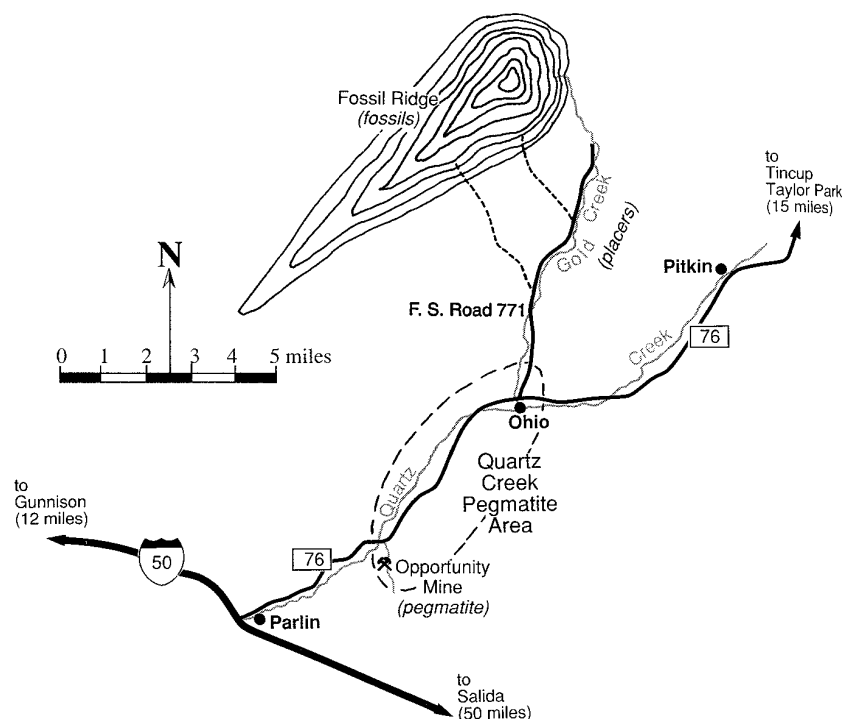
A Location Guide for Rock Hounds in the United States



MARBLE (40 mi. S on Rte. 133 from Glenwood Springs in Garfield Co., on W flank of the Elk Mts. at Rock Cr., with Crystal 6 mi. to the E as central part of the dist., alt. 9,000' to 13,000'): ① area mines—**Barite, Calcite, Chalcopryrite, Fluorite, Galena, Pyrite, Quartz crystals**, Silver-bearing **Tetrahedrite, Specularite**; ② NW, along highway to Carbondale (Garfield Co.), as float—"Colorado Yule" **marble**; ③ town quarry waste, RR road ballast; ④ 2 mi. distant across river, the Yule Quarry; ⑤ old mill site on W edge of Crystal R. (fantastic ruins); ⑥ E, at the Strauss Quarry—gem grade **marble**; ⑦ head of Yule Cr., as massive beds to 50' thick—**Andradite** garnet.

OHIO: ① W, in the Quartz Cr. area, more than 500 pegmatites (see map next page)—**Beryl, Columbium-Tantalum** minerals, **Lepidolite, mica, Monazite, Tourmaline**; ② SW 1.8 mi., two rich pegmatite outcrops; ③ SW 2½ mi., at a rd. fork and within a radius of 1,200' to the E, a dozen pegmatites; ④ SW 3.4 mi., a rich pegmatite; ⑤ SW 3¾ mi., rich pegmatite in hornblende gneiss; ⑥ many other area pegmatite exposures—**Beryl, Columbium-Tantalum** minerals, **Lepidolite, Monazite, Tourmaline**; ⑦ the Opportunity No. 1 prospect (open cut on E side of a N-trending low ridge on E side of Quartz Cr.—**Albite, Beryl, Columbite-Tantalite, Cleavelandite, Muscovite, Microcline**).

Colorado



PARLIN: ① the Quartz Cr. Dist. (29 sq. mi.) via Rte. 162, a region of 1,803 pegmatites containing a total of 27 species of gemstones and minerals; ② the Brown Derby Mine—**Lithium pegmatite gems**; ③ S 3 to 4 mi., at Cochetopa (Green Mt., Gold Basin) and extending for Cochetopa Cr. 2 to 4 mi. W—free-milling **Gold**, some **Copper minerals**, possibly **Tellurium**; ④ N 8½ mi. on Rte. 162 past the Opportunity and Brown Derby mines, turn onto Fossil Ridge dirt rd. for 0.2 mi., to the Bucky Mine—**Beryl** (blue, green, to 12" long), **Columbite-Tantalite**, **Gahnite**, **Lepidolite**, **Lithiophyllite-Triphylite**, **Monazite**, **Muscovite**, **Quartz**, **Topaz**.

PITKIN: ① NE 1 to 4 mi. and near rd. to Tincup, in S end of a mineralized area which includes Tincup, many mines—**Gold**, **Lead-Silver**, spotty **Molybdenite**; ② S 6 mi. and near US 50 about 25 mi. E of Gunnison, in Box Canyon at old Independence and Camp Bird mines 3 to 4 mi. N of Waunite Hot Springs Cr. on steep rds., free-milling—**Gold**; ③ N 15 mi., Tincup at head of Willow Cr. on extreme SE side of Taylor Park and 26 mi. E of Gunnison via Rte. 162—blanket deposits of **Gold-Lead-Silver**, spotty **Molybdenite**, some **Huebnerite**. (Cumberland Pass, 12,000' alt., separates Pitkin from Tincup.)

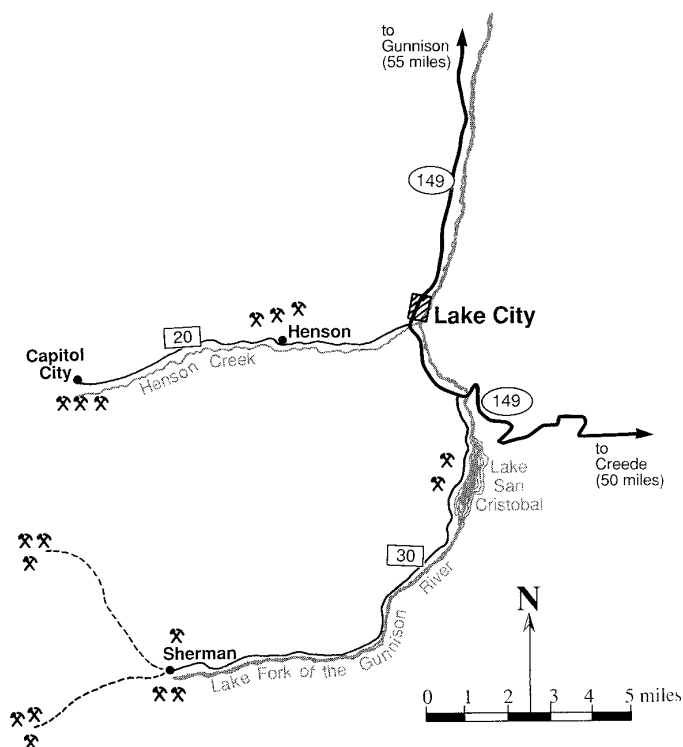
POWERHORN, in the Cebolla Dist. (Iola, Domingo, Vulcan, White Earth), 3 mi. SE of Powderhorn, which is 20 mi. S of Iola, on US 50, reached via Hwy. 149, and mines along Cebolla Cr.—**Gold**, **Gold-Silver**, **Copper-Gold-Silver**, **Pyrite**, **Aegirite**, **Amphibole**, **Bastnaesite**, **Brugnatellite**, **Calcite**, **Cancrinite**, **Cebollite**, **Cerite**, **Diopside**, **Dolomite**, **Fluorite**, **Hastingsite**, **Juanite**, **Melilite**, **Monticellite**, **Natrolite**, **Nephillite**, **Olivine**, **Perovskite**, **Pyrochlore**, **Spinel**, **Synchisite**, **Thorite**, **Thorogummite**, **Titaniferous Vesuvianite**, **Wollastonite**, **Xenotime**.

SARGENTS, N 10 mi., at Tomichi (Whitepine), a ghost town, area—**Gold**, **Lead**, **Silver**, **Zinc**, **Copper**.

A Location Guide for Rock Hounds in the United States

HINSDALE COUNTY

EUREKA (historic ghost town not on most maps), the Sunnyside Mine—pink gem **Rhodonite**. (This is a noted locality with good material available at the old mill in town, since the aggregate used in the concrete was Rhodonite.)



LAKE CITY: ① along Henson Cr. above town, mine—**Lead-Zinc** ores with subordinate **Gold Telluride** and **Chalcopyrite**; ② the Hidden Treasure, Monte Queen and Champion mines—**Rhodochrosite**; ③ S 5 mi., Lake Fork at N end of Lake San Cristobal, noted for the Golden Fleece Mine—**Gold Telluride**; ④ SW 12 mi., between Lake Fork and its tributary Henson Cr., in several dists., on Rte. 351 near head of Lake Fork of the Gunnison R., alt. 10,500' to 12,000'—**Chalcopyrite**, **Galena-Sphalerite**, **Gold-Silver**; ⑤ SW 18 mi., Carson, at head of Lost Trail Cr.—**Barite** (chief gangue mineral), **Lead**, **Silver**, some **Copper** and **Gold**, a little **Zinc**; ⑥ on Lake City mine dumps—**Pyrite**, **Galena**, **Sphalerite**, **Chalcopyrite**, **Stibnite**, **Tellurides**, **Argentite**, **Proustite**, **Tetrahedrite**, **Cerussite**, **Bornite**, **Malachite**, **Azurite**, **Rhodochrosite**, **Quartz**, **Calcite**, **Fluorite**, **Barite**.

HUERFANO COUNTY

LA VETA (11 mi. SW of Walsenburg via US 160 and 5 mi. on Rte. 111), area mines—**Silver** (associated with **Galena**), gray **Copper**, **Chalcopyrite**, **Sphalerite**, **Siderite**, and **Calcite**, **Barite** and **Quartz** as gangue minerals.

JACKSON COUNTY

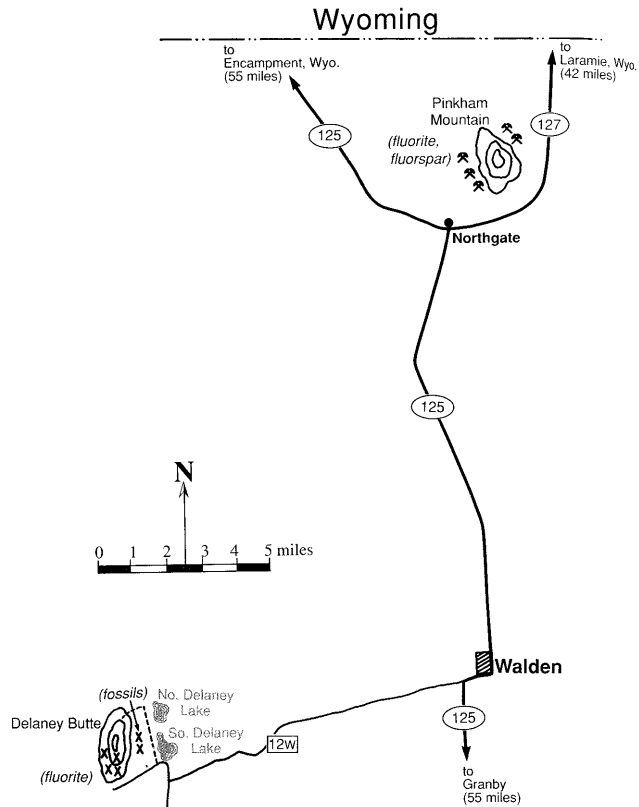
COWDRY, NW 18 mi. on Rte. 125, to Pearl, area mines—**Chalcopyrite**, **Gold**, **Silver**, dark **Sphalerite**.

Colorado

NORTHGATE Dist., 4 mi. NW of Northgate at Pinkham Mt., not far from Hwy., 127—**Fluorite** (purple, green), **Ilsemannite**, **Marcasite**, **Pyrite**.

RAND, SE 9 mi., at Teller, on Jack Cr., alt. 9,000 to 10,000', area mining prospects—**Copper**, **Gold**, **Silver**.

WALDEN, 10 mi. W at Delaney Butte—**Fluorite**, **fossils**.

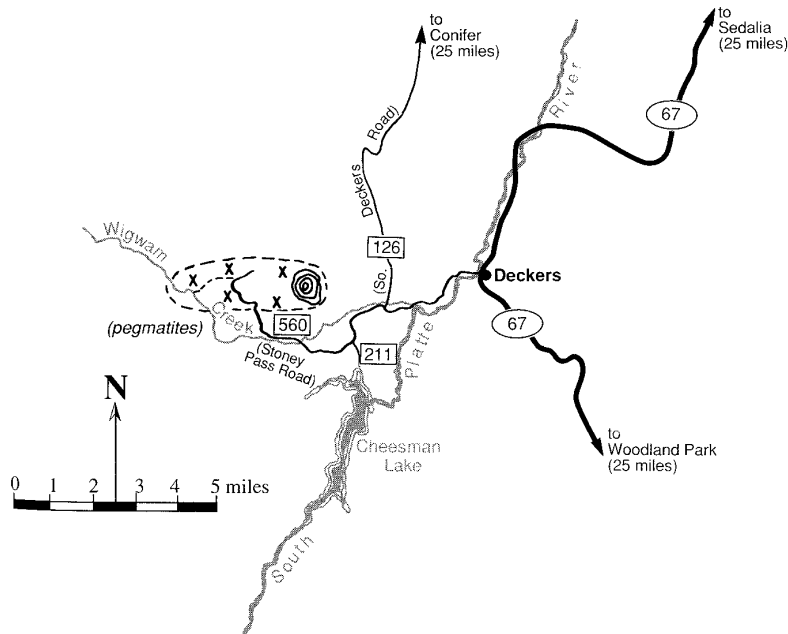


JEFFERSON COUNTY

AREA: ① Bear Cr. (between Golden and Ralston), area deposits—**alabaster**; ② Drew hill, area—**Chrysoberyl**.

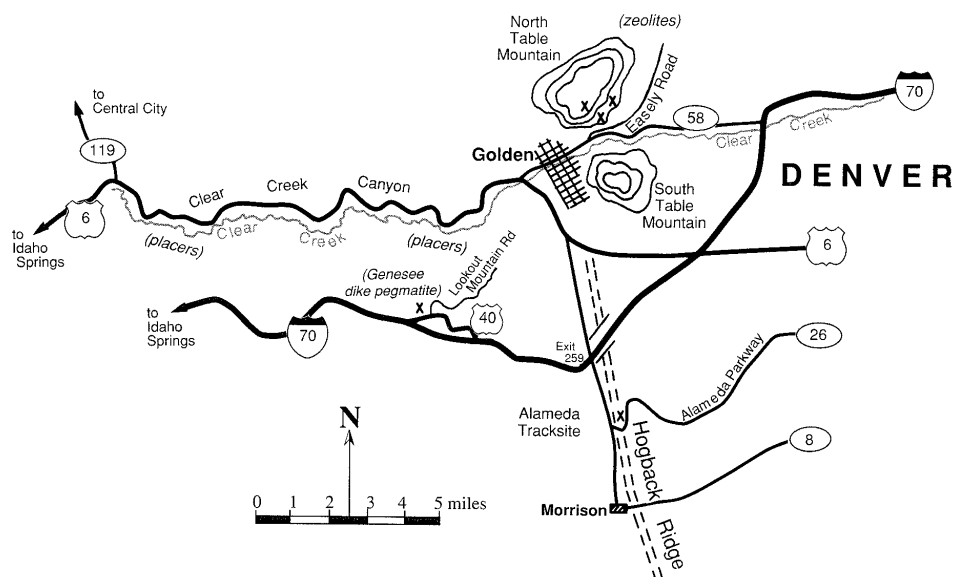
CRITCHELL, Black Knight vein, 2 mi. SSW—**Autunite**, **Becquerelite**, **Fourmarierite**, **Pitchblende**, **Uranophane**.

DECKER, the Wigwam Cr.-Sugarloaf Peak area west of town—**Amazonite**, purple **Fluorite**, **Quartz** (clear smoky).



A Location Guide for Rock Hounds in the United States

EVERGREEN (12 mi. W of Morrison on Rte. 74, an important recreational center):
 ① $\frac{1}{2}$ mi. above town on Cub Cr., deposit—**Chalcocite**, **Quartz-Fluorite** (vein), **Silver**, yellow **Sphalerite**; ② S $1\frac{1}{2}$ mi. on Rte. 73, the Augusta Mine—**Fluorite**, **Galena**, **Azurite**, **Barite**, **Chalcocite**, **Cerussite**, **Lead** and **Zinc** minerals, **Sphalerite**, **Limonite**, **Willemite**: (a) SW $\frac{3}{4}$ mi., on NW side of Cub Cr. along Rte. 334, and (b) $\frac{1}{4}$ mi. W of Rte. 74, in Augusta Mine-type exposures—**Fluorite**, **Gold**, **Silver**, **Chalcocite**, **Sphalerite**, **Willemite**.



GOLDEN: ① along Clear Cr. to E, fine placers—**Gold**; ② North and South Table Mts. (basalt mesas near town on sides of Clear Cr.): (a) very many mines and prospects—**Apophyllite**, **Aragonite**, **Calcite** (luminescent), **Halloysite**, gemmy **Zeolite** crystals; (b) many area quarries with good access rds.—dog-tooth **Calcite**, **Heulandite**, **Laumontite**, **Levynite**, **Mordenite**, **Scolecite**, **Stilbite**, **Zeolites** (Analcime, Chabazite, Mesolite, Natrolite, Thomsonite most common, 14 var. total); ③ W 8 mi., the Roscoe beryl prospect (Sec. 5, T. 4 S, R. 71 W) —**Beryl**; ④ NW $7\frac{1}{2}$ mi. on Rte. 93 toward Leyden, the Leyden Coal Mine—**Carnotite**, **Coffinite**; ⑤ NW 9.1 mi. via Rte. 58 to: (a) No Name Pegmatite (in Golden Gate Canyon) —**Tourmaline** (crystals to 12" long); (b) at mi. $10\frac{1}{2}$, jct. Robinson Hill, the Robinson Gulch prospect, pegmatite—**Feldspar**, **Chrysoberyl**, black **Tourmaline**; ⑥ W on US 40, past jct. with Lookout Mt. rd., then 0.6 mi. to Conoco service sta., area pegmatite exposures in curve in rd.—**Allanite**, **Astrophyllite**, **Epidote**, **Grossularite** garnet (to 12" dia.), **Hyalite** opal, **Hornblende**, **Idocrase**, **Magnetite**, **Scheelite**, **Sphene**, **Vermiculite**, **Wernerite**; ⑦ W 15 mi., at Centennial Cone, NW flanks, area pegmatites—**Aquamarine**, **Bertrandite**, **Beryl**, **Smoky Quartz** crystals, **Samaraskite**.

MORRISON, W 3 mi., the Malachite Mine (on divide between Bear Cr. and Mt. Vernon) —massive **Chalcopyrite** (with dark **Sphalerite**), **Augite**, **Copper**, **Labradorite**, **Pyrrhotite**.

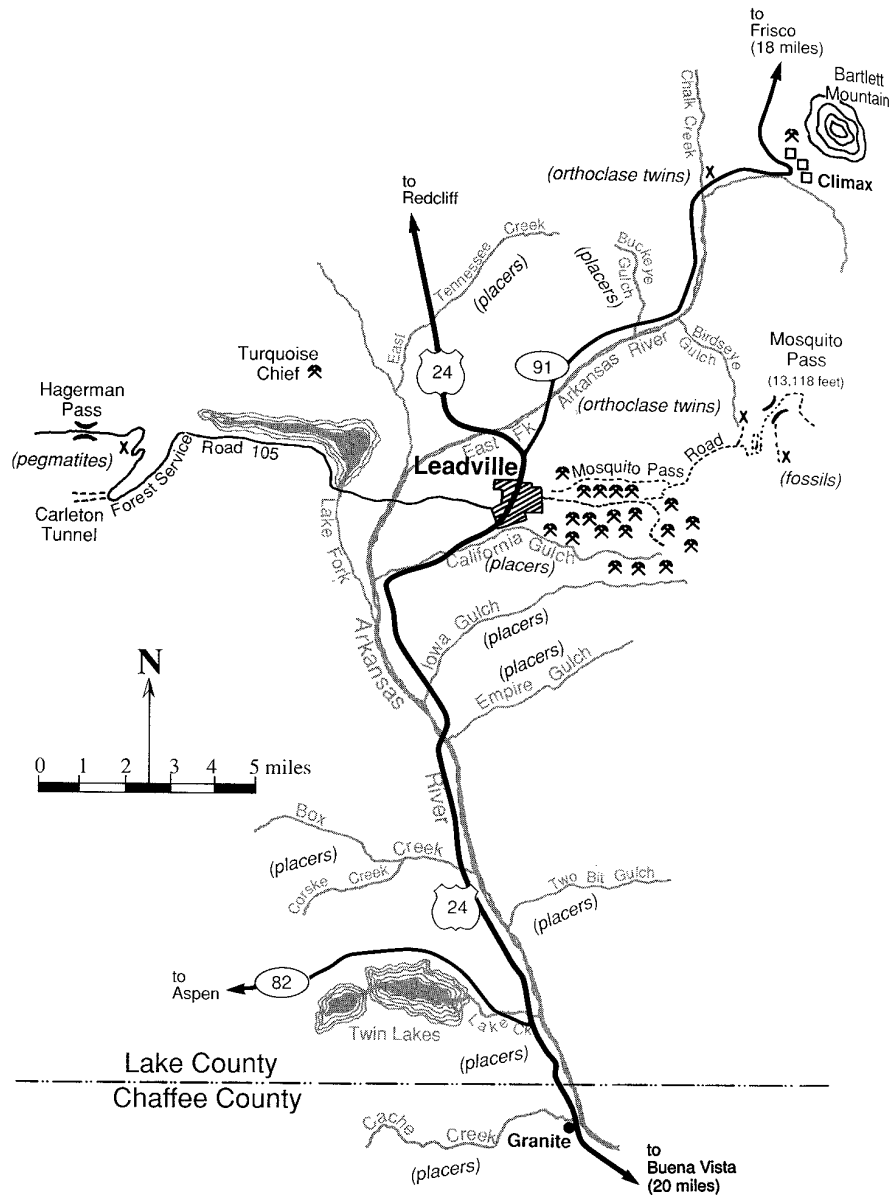
KIT CARSON COUNTY

BURLINGTON, N 20 mi. along S Fork of the Republican R., broad area—**moss opal**, **petrified wood**.
 broad area—**agate**, **chalcedony**, **jasper**, **opal** (mossy, opaque, white).

Colorado

LAKE COUNTY

AREA, T. 10 S, R. 80 W, at Box Cr., dredger operations—**Gold**.



CLIMAX: ① SE 1 mi., in valley of the Arkansas R. (10 to 12 mi. NE of Leadville), the Alicante Mine—**Copper, Bismuth, Gold, Lead, Manganese-Iron ores, Hematite, Pyrite, Silver, Zinc, Siderite**, etc.; ② California Evans, Iowa, Empire mines, alt. 10,150' on W slope of the Mosquito Range—**Bismuth, Copper, Gold, Iron, Lead, Manganese-Iron ores, Pyrite, Silver, Zinc, Siderite**, etc. (the Leadville Dist. is one of the leading metal-producing area in America, lying in the broad open valley of the Arkansas R. along US 24 at a two-mile altitude.); ③ N, the Kokomo mines—**Pyrite** (excellent crystals); ④ W 4 mi., at St. Kevin-Sugar Loaf, early metal producers—**Gold, Silver**, and on the dump some **pink carbonates**; ⑤ NW 6.9 mi. via the Turquoise Lake rd. and Bear Lake truck rd.: (a) the Turquoise Chief Mine—**Metatorbernite, Turquoise**; (b) adjacent old Iron mask

A Location Guide for Rock Hounds in the United States

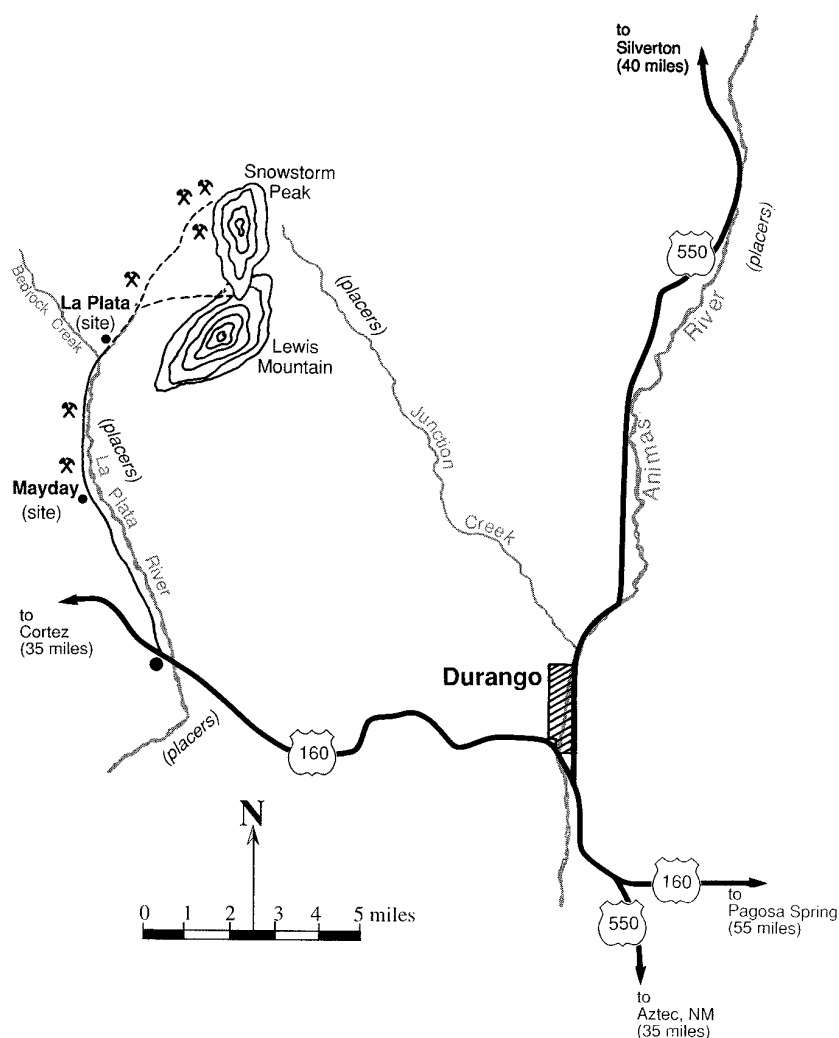
Mine—**Hematite, Pyrite, Siderite**; (c) W 2,000' from the Turquoise Chief, at the Josie May prospect; and (d) two mi. NE of the Josie May—**Chrysocolla, Malachite, Torbernite, Turquoise**; © SW 22 mi. and 5 mi. W of Granite (Chaffee Co.), a dist. which includes all of the Lake Cr. drainage W of Twin Lakes, many area mines—**Gold, Lead, Silver, Zinc**.

LA PLATA COUNTY

AREA, Animas R. gravels, placers—**Gold**.

DURANGO, N 25 mi. to the flagstop of Needleton, the E 6 mi. to the Needles Mts. (Tacoma, Florida R., Vallecito, with Chicago Basin center of dist.), alt. 11,000' to 12,000', many area mines—**Barite, Calcite, Chalcopryite, Fluorite, Copper, Gold, Galena, Pyrite, Rhodochrosite, Silver**.

GEM VILLAGE, headquarters town for gem and mineral collectors. many local summer field trips to adjoining gem-collecting localities are provided by residents.



LA PLATA, large surrounding area in the heart of the La Plata Mts., and area at head of Junction Cr. on E flank of mts., separated from town by Eagle Pass (alt. 11,700')—**Barite, Calcite, Chalcocite** veins, **Chalcopryite** (bearing **Platinum**), **Galena, Gold Tellurides** (Sylvanite, Calaverite, Petzite), pyritic **Gold, Pyrite, Quartz, Ruby-silver** (veins), **Silver, Sphalerite, Tetrahedrite**, etc. (More than 60 mineral species occur in this dist.)

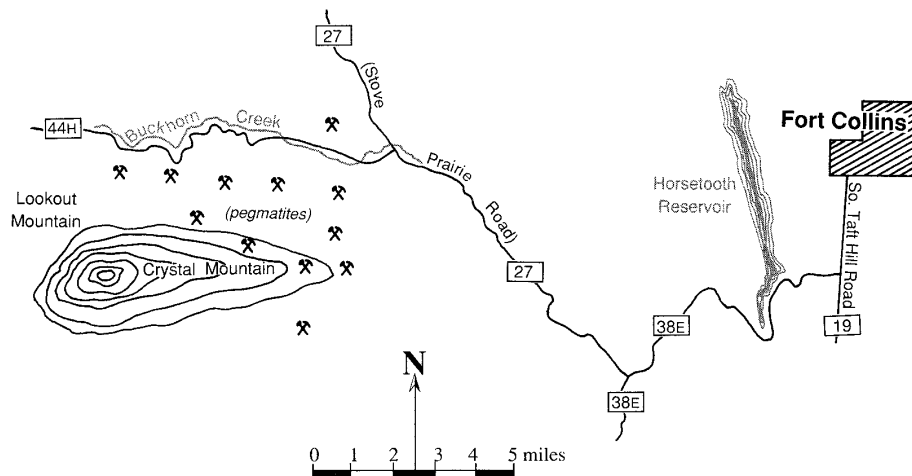
Colorado

LARIMER COUNTY

BELLVUE (on US 287), SW 3 mi. at Empire (Howes Gulch) and 6 mi. SW of Fort Collins, area mines—**Chalcopyrite**, some **Gold**, cupriferous **Pyrite**.

ESTES PARK, W 31 mi. on US 34 on Trail Ridge rd. to Milner Pass, just before reaching the Poudre Lakes, take right-hand trail (keeping left) for 1½ mi. to Specimen Mt., numerous localities on W and S slopes—**Allophane**, **Calcite**, **agate**, **Quartz**, **Topaz** and **Tridymite**.

FORT COLLINS: ① N 17 mi. to Owl Canyon Trading Post, turn onto side rd. S of store (keep right) for 1.7 mi. to quarry in a gully—rich **alabaster**, **onyx**, **Satin Spar**, **Selenite**; ② W 15½ mi., the Wisdom Ranch prospect (S½ Sec. 5, T. 7 N, R. 74 W) —**Beryl**, **Chrysoberyl**, **Garnet**, **graphic granite**; ③ WNW 33 mi., near line between Sec. 1 & 2, T. 8 N, R. 74 W, the Chaney-Sims beryl prospects—**Beryl**; ④ W 45 mi., at Manhattan, then N 3 to 4 mi. on steep rd. off Rte. 14, placers—**Gold**; ⑤ Crystal Mt. Dist., about 6 sq. mi. in area (T. 7 N, R. 71 & 72 W), 18 air miles or 45 road mi. west, deposits are S and E of Crystal Mt. (see below) —**Autunite**, **Bertrandite**, **Beryl**, **Bismuthinite**, **Bismutite**, **Columbite-Tantalite**, **Fluorapatite**, **Gummite**, **Lithiophilite-Triphylite**, **Muscovite**, **Purpurite**, **Uraninite**.



LIVERMORE, FOLLOW Co. rd. 80C (Cherokee Park rd.) NW for 30 mi. to the Diamond Peak area near the WY line—**Diamond**.

RED FEATHER LAKES (Dist.), the Pennoyer Amethyst Mine (fee) —**Amethyst**, **Quartz** crystals.

LAS ANIMAS COUNTY

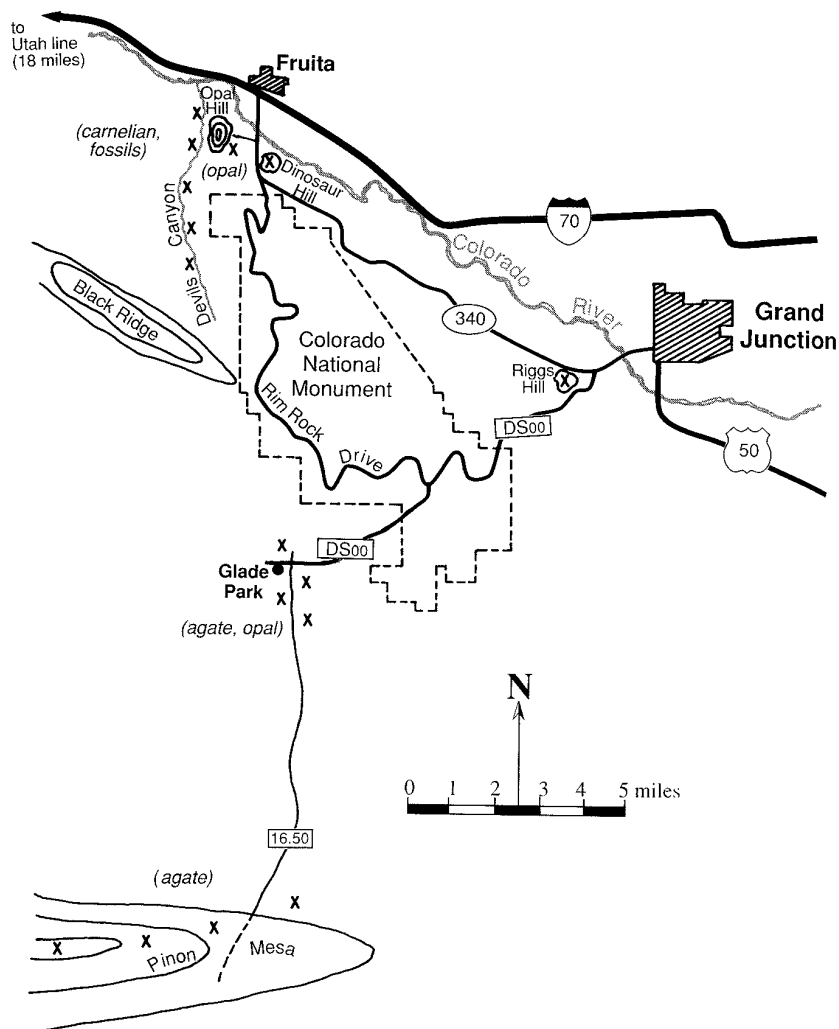
MODEL, NE 0.7 mi. on US 350, turn E for 8 mi. toward Canyon Sta., exposure of the Van Bremmer dike, in veins and in septarian concretions—**Calcite** crystals (some clear as *Iceland Spar*).

TRINIDAD: ① SE 34 mi., at Trinchera Mesa in Wet Mt. Valley, in coal seams—**jet**; ② W 35 mi., at Monument Lake, area rd. cuts and stream gravels—green **jasper** (*Stonewall Jade*).

A Location Guide for Rock Hounds in the United States

MESA COUNTY

AREA: ① Black Ridge, fossil beds—**petrified Dinosaur bone, gastroliths**; ② Colorado R. Valley and side canyons W from Grand Junction to the Utah line—**agate, chalcedony, jasper, opal, petrified wood and Dinosaur bones**.



CORTEZ, area of Goodman's Point—**petrified Dinosaur bones**.

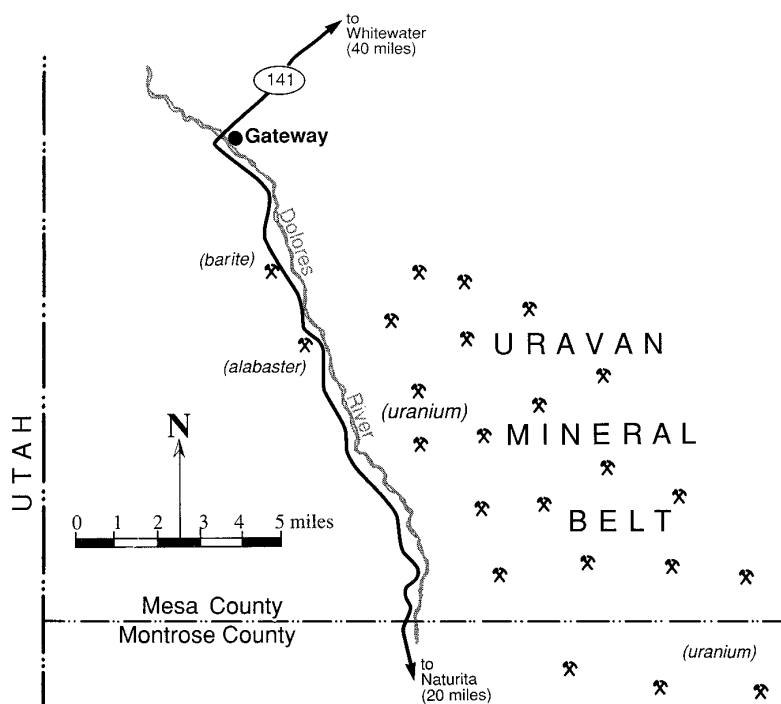
DELTA, E 15 mi., area **alabaster**.

DELTA-WHITEWATER, area called the Indian Hunting Gound—**silicified wood**.

FRUITA: ① S 2 mi., area—**petrified Dinosaur bone, gastroliths**; ② S, in regional exposures of the Morrison formation (sandstones)—**petrified Dinosaur bones**; ③ S 3 mi. on Rte. 340, cross the Colorado R., then W on gravel rd. to Opal (Blue) Hill, on both sides E and W of the ½ mi. long ridge—**opalized wood**; ④ W 4 mi., at Dinosaur Ridge, exposures of the Morrison formation—**petrified Dinosaur bones (Allosaurs, Brontosaurus)**; ⑤ SE Rim Rock Drive (toll, 22 mi. long), area outside Colorado National Monument—**agate (banded, moss), Aragonite, Amethyst, jasper, Quartz crystals, petrified Dinosaur bones**.

GATEWAY: ① S 3.9 mi. on the Uravan Hwy., cross Dolores R. to log building, in cliff next to rd. an old Barite mine—**Barite, banded alabaster**; ② at mi. 6.1 S, turn right, a deposit in the Monkopi formation—**alabaster, Gypsum**.

Colorado



GLADE PARK: ① area, including Pinon Mesa—**opal, opalized wood**; ② S $3\frac{1}{2}$ mi. to region of Pinon Mesa (extends W into Utah, 40 mi. long by 10 mi. wide, as part of the Fruita division of the Grand Mesa national Forest), lower section—**agate**; ③ 8.3 mi. out on main rd. crossing Pinon Mesa, past Mud Springs campground to area of Windy Point: (a) left "JS" rd. to North East Cr. and Johnson Cr. (on the way to S rim of mesa) —**smoky chalcedony, jasper, petrified wood**; (b) right rd. No. 16.55, for 2 mi. toward Fruita Guard Sta., area—desert **Rose Quartz** pseudomorphs after **Barite**.

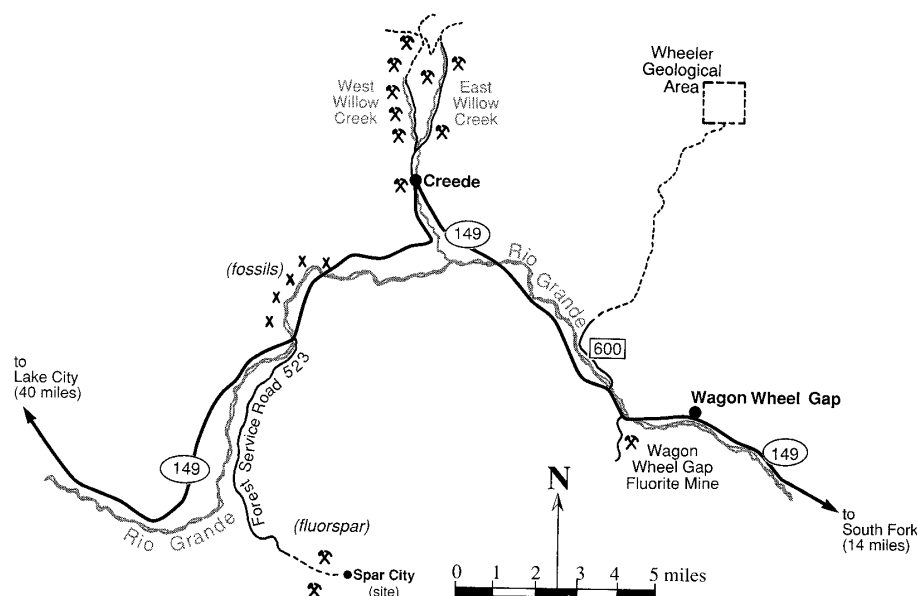
GRAND JUNCTION: ① W 5 mi. on US 6 & 50, then N toward Book Cliffs, area—**Barite** crystals, **Uranium minerals, Dinosaur bones**; ② 13 mi. out on the Serpent's Trail (or 18 mi. from Fruita via Rimrock Dr.), area around Glade Park—**opalized wood**.

WHITEWATER, SW 15 mi. on Rte. 141, to Unaweep, on East Cr. in Unaweep Canyon, area—**Calcite, Chalcopyrite**, some **Fluorite** (with Pyrite), **Hematite**.

MINERAL COUNTY

CREEDE: ① mining dist. on Willow Cr.—**Amethyst** (massive crystals), **chalcedony, Lead-Silver minerals, Sphalerite**. (all regional silver mines produce Amethyst crystals and clusters on their dumps.) ② N 0.8 mi., on left fork of West Willow Cr.: (a) bed of creek—**Turquoise**; (b) the Commodore Mine—gem **Amethyst, Lead, Silver**; ③ W of West Willow Cr.: (a) the Amethyst Lode, numerous area mines—**agate, Amethyst, Anglesite, Barite, Cerussite, Chalcopyrite, Chlorite, Galena, wire Gold, Goslarite, Limonite, Malachite, Pyrite, native Silver, Sphalerite, Thuringite**; (b) gravels between Amethyst and Commodore mines—**Turquoise**; ④ Holy Moses Mine—**Massicot**; ⑤ King Solomon, Sunnyside mines (end of Rte. 149, alt. 9,000' to 11,000') —**Lead-Silver** veins, **Argentiferous Galena, Gold, Chalcopyrite, Pyrite, Pyrargyrite, Sphalerite** with gangue minerals of **Amethyst, Barite, Fluorite, Chlorite**; ⑥ Ridge Mine—**Sphalerite**; ⑦ Last Chance Mine—**Turquoise**.

A Location Guide for Rock Hounds in the United States



WAGON WHEEL GAP: ① E 1.7 mi. via Wagon Wheel Ranch rd. across Rio Grande R. bridge to: (a) Wagon Wheel Gap Mine on E side of Goose Cr.—**Barite, Beidellite, Calcite, chalcedony, Fluorite, Creedite, Gearsutite, Halloysite, Quartz**; (b) ridge E of area hot springs—**Barite**, crystals; ② Embargo mining dist., area—**agate** (moss, banded), **chalcedony, jasper, Quartz**.

WOLF CREEK PASS (SE corner of Co., alt. 10,860'): ① along Wolf Cr.—**agate, chalcedony, jasper, moonstone, Quartz** crystals, **Amethyst geodes, Natrolite**; ② summit of pass: (a) valley to right—**Amethyst**; (b) Treasure Falls, in area of a cliff dipping to the left—gem **agate**; (c) gravels below rd.—**agate**; ③ W 6 mi. from summit, area—**agate, chalcedony, jasper, moonstone**.

MOFFAT COUNTY

AREA: ① Green and Yampa R. breaks, gravels, etc.—**agate, carnelian, chalcedony, Dinosaur bones, jasper**; ② S and E slopes of the Uinta Mts.: (a) hillside gravels along US 40, and (b) N of US 40 between the Utah line and Cross Mt. (15 mi. W of Maybell)—**agate, chalcedony, chert, flint, opal, Dinosaur bones** and **petrified wood**.

ARTESIA, 25 mi. E on US 40, then N on rd. between Big and Little Wolf Cr. and hike mi. to hill—**agate**.

CRAIG: ① Area exposures, abundant—**agate, chalcedony, jasper, Dinosaur bones** and **petrified wood**; ② SW 12 mi., at Round Bottom on N side of the Yampa R., area placer gravels—**Gold**; ③ W 19 mi., at Lay on US 40, with the latest operation 6 to 10 mi. N on Lay Cr., placer—**Gold**; ④ N 35 mi., at Fourmile Cr. (and Timberlake Cr.), close to Rte. 13 with Baggs, WY 5 mi. to N, placer gravels covering the dry, rolling plain along W base of Elk Mts. in an area 30 by 40 mi.—**Gold**; ⑤ W 80 mi. and within 5 mi. of US 40, at Skull Cr. (and Blue Mt.), mines—**Copper, Vanadium**; ⑥ Breeze Mt., 4½ mi. SE and S on Hwy. 394—**Analcite, Olivine, Stilbite**.

GREYSTONE, SW 10 mi., at Douglas Mt., mines—**Chalcocite, Copper**, some **Galena** and **Silver**.

Colorado

MONTEZUMA COUNTY

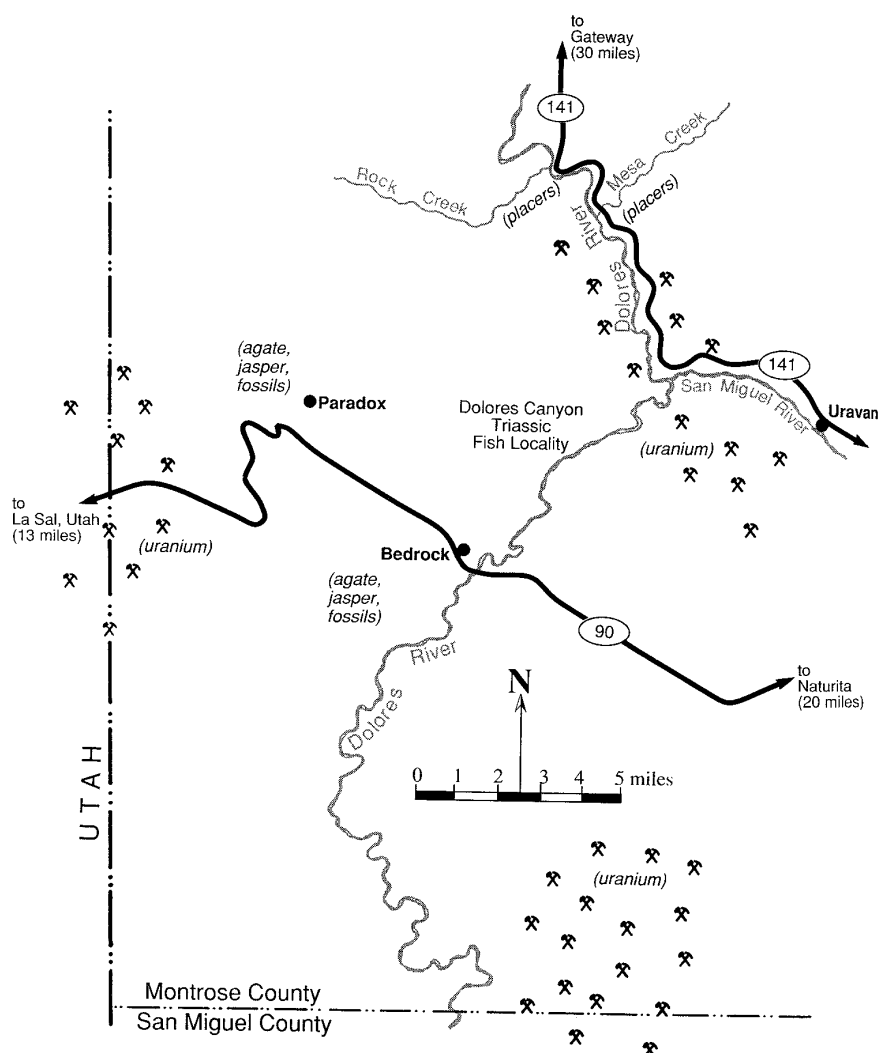
AREA, exposures of McElmo Cr. Valley sandstones—petrified **Dinosaur bones**.

MANCOS, E 8 to 14 mi., East Mancos R.: ① area stream gravels, and ② the Red Arrow Mine, placer and lode—**Gold, Silver**.

RICO, SW 15 mi., at Bear Cr.—placer **Gold**, some **Chalcocite** in ore bodies.

MONTROSE COUNTY

AREA, the Cashin Mine, 4½ mi. above the mouth of La Sal Cr., a tributary of Gypsum Cr., and about the same distance S of Paradox—**Amalgam, Bornite, Chalcocite, Covellite, Cuprite**, native **Copper**, and **Silver, Domeykite, Luzonite, Uraninite**.



CIMMARON, E 1 mi., at Goat Hill No. 1 prospect—**graphic granite**.

NATURITA: ① E 4 mi. on Rte. 145, turn right on Rte. 80 for 17.1 mi. to Basin Store, turn right at 24.2 and proceed to old barn at mi. 26.2, area E of rd. across a Cr. and summit of hill—gem black **agate**; ② T. 46 N, R. 15 W, in sand and gravel bars on beaches above water level along the San Miguel and Uncompahgre rivers, placer—**Gold**.

A Location Guide for Rock Hounds in the United States

PARADOX (on Rte. 90), 6 mi. out at La Sal Cr. and about 100 mi. S of Grand Junction and 85 mi. W of Montrose, numerous mines—**Chalcocite**, native **Copper**, and **Silver**, placer **Gold** in creeks.

UNCOMPAHGRE, area gravels—**bloodstone**.

URAVAN, SE 3 mi. on Rte. 141 to Tabeguatche Cr., then E up Cr. for 18 mi. to the Tabeguatche Basin, an area noted for its conglomerate boulders on a bench on N side of the basin at a place known as the Copper King prospect, as impregnations in the boulders—**Azurite**.

OTERO COUNTY

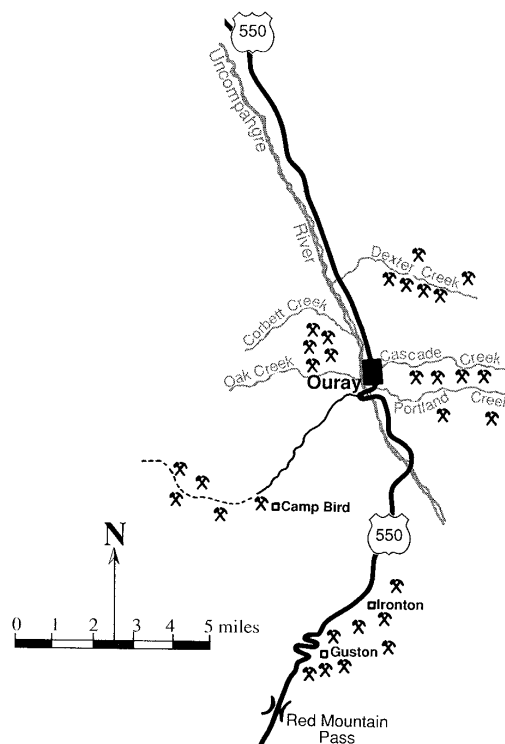
LA JUNTA, S, area surfaces on regional ranches—jasperized **Dinosaur bones**.

OURAY COUNTY

MIDDLETON, the Ruby Mine—**Huebnerite**.

OURAY: ① area of a radius of 10 to 15 mi., many old mines—**Lead**, **Gold**, **Silver**, **Copper**, **Zinc**, **Pyrite**, etc.; ② just N, on E side of valley a few mi. off US 550 by steep grades to Uncompahgre, many mines operating in Magnetite-Pyrite ores—**Copper**, **Gold**, **Pyrite**, **Magnetite**, **Tellurides** of Gold and Silver, siliceous and baritic ores containing **Lead**, **Silver**, **Zinc**; ③ gravels and banks of the Uncompahgre R.—**bloodstone**, **Quartz geodes**; ④ S 6 mi., the Treasury Tunnel (Idarado Mining Co.) near US 550—**Bismuth-bearing minerals** such as **Kasolite**, argentiferous gray **Copper**, **Enargite**, **Lead-Zinc** sulfides, **Polybasite**, **Proustite**, **Calcite** crystals (some fluorescent), **Fluorite**, **Quartz** crystals; ⑤ WSW 8 mi. on Rte. 361, at Sneffels (Imogene Basin): (a) area mines—**Argentite**, **Argentiferous Tetrahedrite**, **Chalcopyrite**, **Calcite**, **Gold**, **Galena**, **Pyrite**, **Rhodonite**, **Rhodochrosite**, **Sphalerite**, **Silver**, **Stephanite**; (b) Mt. Sneffels, area—**Andradite** garnet; ⑥ S 12 mi., Red Mt. Pass (alt. 11,018'), the Longfellow Mine—**Chalcocite**, **Colusite**, **Enargite**, **Tetrahedrite**.

TELLURIDE, W 7 mi., on Diamond Hill (via jeep rd.), abundant—**Quartz** crystals.



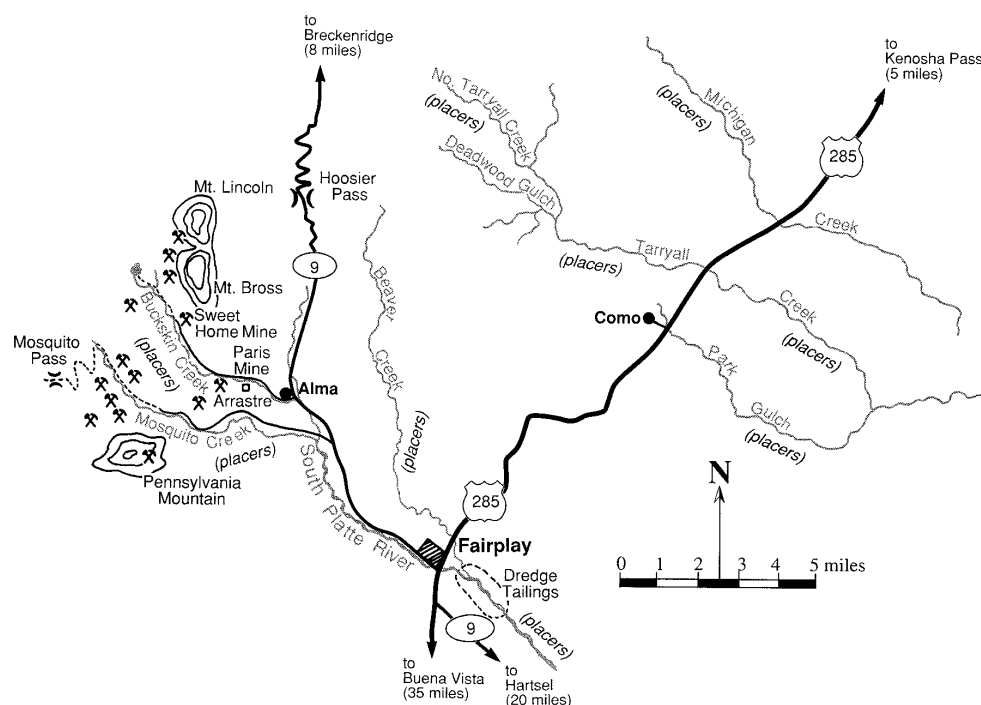
PARK COUNTY

AREA, South Park, near Grand R., area—**bloodstone**, **Garnet**.

ALMA: ① NE $\frac{1}{4}$ to $\frac{1}{2}$ mi., E side of the South Platte R., placers, as coarse nuggets to several oz.—**Gold**; ② NW 2 to 6 mi., in small veins in crystalline rocks—**Gold**, **Gold-Silver**, **Lead-Silver**, **Zinc**; ③ N 5 to 10 mi., the Consolidated Montgomery Mine, alt. 11,500' to 13,500'—**Gold**, **Lead**, **Silver**, **Zinc**, etc.; ④ Sweethome Mine, in Buckskin Gulch—**Rhodochrosite**, **Fluorite**, **Huebnerite**; ⑤ area of Mosquito Cr. and its tributaries, alt

Colorado

10,500' to 12,500', mines—**Gold, Galena, Chalcopryite, Lead, Pyrite, Silver, Sphalerite, Zinc**, etc.



ANTERO JUNCTION, N 0.7 mi. on US 285, crest of hill, area—**agate, jasper, travertine**.

BAILEY: ① area of Beaver Cr., alt. 10,000' to 10,500', placers in outwash gravels from Wisconsin Ice Age moraines from the South Platte glacier—**Gold**; ② W 13 to 14 mi., area mines—**Barite, Bismuth, Chalcopryite, Copper, Gold, Lead, Silver, Tetrahedrite, Zinc**.

FAIRPLAY: ① area SE of town, alt. 10,250' to 10,500', in gravels of glacial outwash nature—placer **Gold**; ② NE 10 mi., Tarryall Cr. on E slope of Silverheels Mt. W of Como, important placers extending several mi. SE of Como—**Gold**; ③ W by S 12 mi. and N of Fourmile Cr., Sacramento, S of Mosquito Range on boundary between Lake Co. and park Co., alt. 11,400' to 12,500', mines—**Lead-Silver** minerals, some **Zinc**.

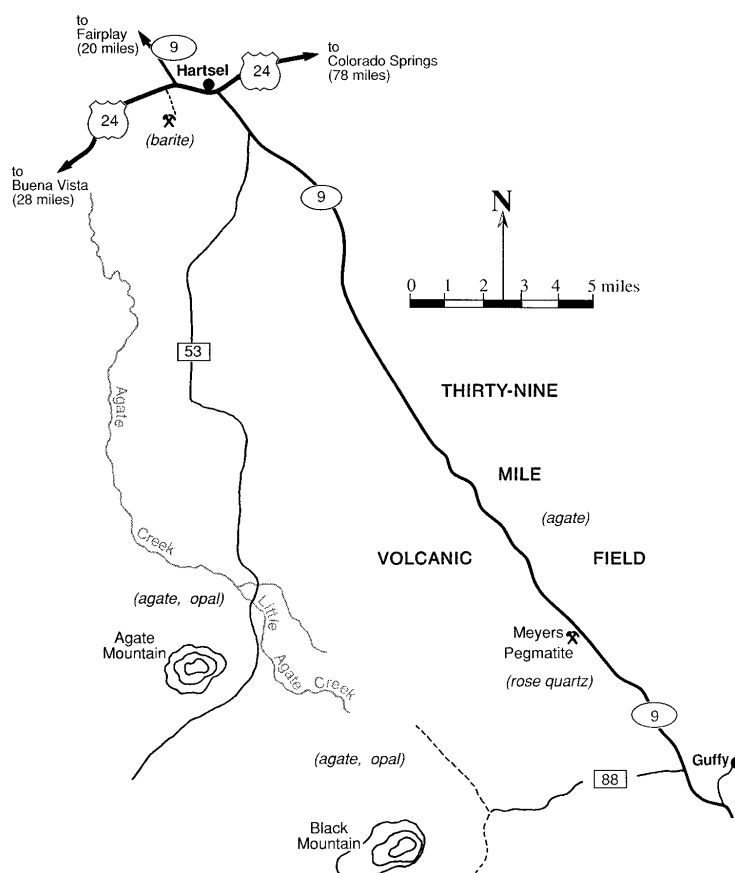
GARO, N 1 mi. on Rte. 24, field pits—**agate, chalcedony** (fluorescent), **Uranium** minerals.

GRANT, N at Geneva Cr. (Collier Mt.), head of W Geneva Cr. and continuous with the Montezuma Dist. to NW in Summit Co., alt. 10,250' to 12,000', area mines—**Copper, Gold, Lead, Silver**.

GUFFEY: ① SW 3 mi., at Copper King prospect in Sec. 21, T. 15 S, R. 73 W—**graphic granite**; ② at 31 Mile Mt., 8 mi. W—blue **agate**.

HARTSEL: ① area South Platte R. gravels—**agate, jasper**; ② SE all along Rte. 9 toward Guffey, especially over the Agate Plateau—gem **agate, chalcedony, jasper**, etc.; ③ W 1½ mi. on US 24 and Rte. 9, on hill beneath low cliffs—**agate, chalcedony, jasper, petrified wood**; ④ SW 3.2 mi. on US 24, the Hartsel Barite Mine (see map next page)—**Barite** crystals (blue, to 5"); ⑤ S 20 mi. on Rte. 9, the Meyers Ranch, in pegmatite (see map next page)—**Rose Quartz, Beryl** (blue, yellow, to 10" across), **Bismuth, Beyerite, Cordierite, Columbite, Feldspars, Fluorapatite, Garnets, Micas, Tantalite** (crystals

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to 6" long), black **Tourmaline**; ⑥ E on US 24 to summit of Wilkerson Pass (alt. 9,525'): (a) area of campground—**Galena, Garnet, Magnetite, Scheelite, Shalerite**, black **Tourmaline**; (b) E of pass 0.6 mi. toward Lake George, area pegmatites—**Beryl, Epidote, Feldspar, Micas, Quartz**; (c) E 2 mi. from pass, the abandoned St. Joe tunnel, and (d) ½ mi. still farther E, an old mine—**Azurite, Bornite, Chalcopyrite, Malachite, Pyrite**.

JEFFERSON, take graded rd. SE into Tarryall R. valley for 30 mi. to Spruce Grove campground, then trail along ridge ½ mi. SE, in pegmatite—**Topaz, Smoky Quartz**.

LAKE GEORGE: ① W 2.9 mi. on US 24: (a) area mines—**Idocrase, Garnets, Micas, Quartz**; (b) at mi. 6½, ghost town of Gold City, area mine dumps—**Idocrase, Garnets, Hematite, Molybdenite**; ② W 3.1 mi. via US 24 and Rte. 77 (toward Tarryall): (a) area old prospects—**Quartz** (to 2" dia.) and **Fluorite**; (b) at 3.4 mi., the Kyner Mine—**Quartz** and **Fluorite**; (c) at 5 mi., the Stevens Ranch (a well known locality)—**Amazonite, Goethite, Hematite, Siderite, Smoky Quartz**; ③ SW 9.7 mi., at Badger Flats: (a) the Boomer Mine (once the largest Beryl producer in America)—**Bertrandite, Beryl, Fluorite, Galena, Muscovite, Quartz, Siderite, Topaz**; (b) on the right, the Blue Jay Mine—**Beryl, Bertrandite, Cassiterite, Sericite, Topaz, Wolframite**; ④ S 1.1 mi. on US 24 and Eleven Mile Canyon rd., exposure of the Teller Pegmatite, area pits—**Allanite, Astrophyllite, Biotite, Gadolinite, Monazite, Xenotime, Yttrifluorite**; ⑤ W and ≈ 15½ mi. via US 24 and Eleven Mile Canyon rd., to Spruce Grove campground, area deposits—**Feldspar, Hematite, Micas, Quartz** crystals (Clear, Smoky), **Topaz** (to 1" long).

Colorado

PITKIN COUNTY

ASPEN: ① area of Roaring Fork, including Aspen, Richmond Hill, Lenado, with principal mines located within 1 mi. of town of Aspen (Mollie Gibson, Smuggler, etc.)—**Gold, Lead, Silver** (massive, wire), **Pyrite, Zinc**; ② N 10 mi., at Ashcroft, a ghost town on Castle Cr., mines—**Lead-Silver**, some **Zinc**; ③ SE 15 mi., at Lincoln Gulch, with mineralized area at head of gulch and 10 mi. from Rte. 82 via poor rd., W side of Ruby Mt., vein—**Galena, Lead-Silver, Sphalerite** (abundant), occasional **Molybdenite**.

PROWERS COUNTY

LAMAR, S 18 mi., area along both sides of US 287 / 385—**silicified wood**.

RIO GRANDE COUNTY

AREA, the Rio Grande R. sands and gravels—**agate, Amethyst lined Geodes, jasper**.

BAXTERVILLE, SW on Hwy. 160 7¾ mi. beyond Wolf Cr. Pass, in loose rock below rd.—blue and gray **agate nodules**.

DEL NORTE: ① W about 8 mi., Embargo Cr., mineralization along Cr. extends a few mi. on either side of the Rio Grande-Saguache Co. line—**Gold, Copper, Lead, Silver**; ② NW 8.8 mi. (into Saguache Co.), park at foot of Twin Mts., in Old Woman Cr., area at W edge of the San Luis Valley: (a) broad area around parking area—**agate, bloodstone, chalcedony, chrysoprase, geodes, jasperized lava, Monte Vista eggs** (nodules with green inclusions to 12" dia.), **opal, petrified wood, Quartz** crystals, **thundereggs**; (b) W of parking area, on S slopes of Twin Mts.—white dendritic **opal**.

MONTE VISTA, SW 30 mi., to **jasper**, with prospects and mines ½ mi. W on Alamosa Cr.—**Galena, Gold, Enargite, Lead, Lead-Zinc** minerals, **Pyrite, Silver, Sphalerite**.

SUMMITVILLE (26 mi. SW of Del Norte), at head of Whightman Fork tributary of Alamosa Cr., alt 11,000' to 12,000', mines—**Barite, Calcite, Covellite, cupriferous Pyrite, Enargite, Galena, Gold, Quartz, Sphalerite**, (The known ore exposures and veins extend throughout 1½ mi., N to S and about 1 mi. E to W on both sides of South Mt.)

ROUTT COUNTY

COLUMBINE (22 mi. N of Steamboat Springs), area old mines—**Copper, Gold, Lead, Pyrite, Silver**, etc.

FISH CREEK Dist. (Sec. 12, T. 6 N, R. 84 W), about 5 mi. E of Steamboat Springs—**Autunite, Uranophane**.

HAHNS PEAK (town 4 mi. N of Columbine): ① area stream beds S of town—placer **Gold**; ② take rd. to Hahns peak (mt.): (a) area slopes, and (b) summit, via 1½ mi. trail—**Quartz** crystals.

SAGUACHE COUNTY

AREA, extreme SW part of Co., along Embargo Cr.—**Copper, Gold, Lead, Silver**.

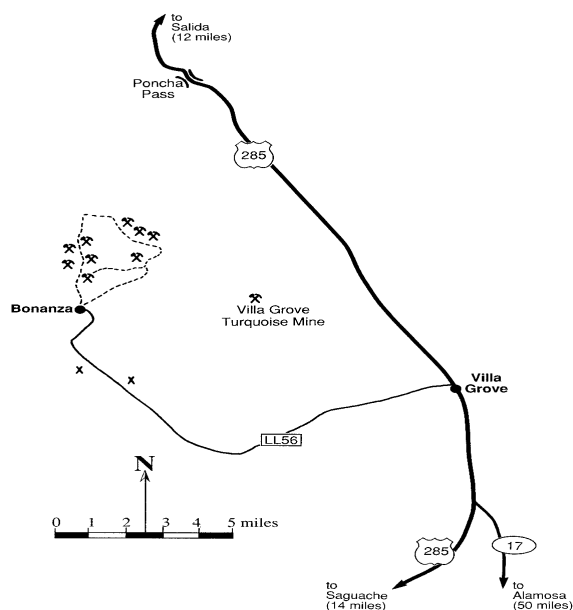
BONANZA (18 mi. W of Villa Grove), area mines: ① in high sulfur Quartz veins—**Galena, Bornite, Enargite**, argentiferous **Tennantite, Zinc** minerals, **Copper, Silver** and some **Gold**; ② in Quartz-Rhodochrosite -Fluorite veins—**Barite, Rhodochrosite, Fluorite**.

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LA GARITA: ① along La Garita Cr. in exposures of volcanic rocks—**agate**, **chalcedony**; ② N 2 mi. on Co. rd. 42 to Co. rd. 42K (to turnoff left) to Crystal Hill Mine (8 mi. distant), area dumps and slopes—**Amethyst**, **Quartz** and **Enhydros**; ③ S 2 mi., along edge of mts. to La Garita Cr., follow up-stream for 3 to 4 mi. into hills, all area sloped—**geodes**.

MOFFAT: ① NE 10 mi. on Cotton Cr., at Blake (Mirage, Cotton Creek), at head of Cotton Cr. on W slopes of the Sangre de Cristo Range, many old mines—**Copper**, **Gold**, **Lead**, **Silver**, **Zinc**; ② E 15 mi., at Crestone (Baca Grant), in a band of Precambrian rocks 3 to 6 mi. wide, scattered occurrences and mines—**Copper**, **Gold**, **Lead**, **Silver**.

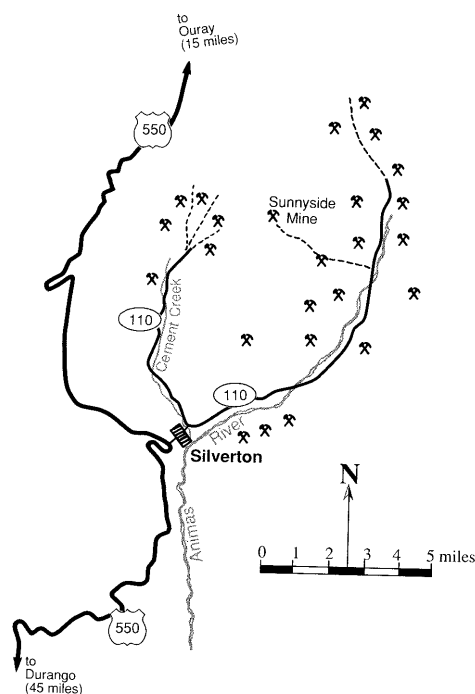
VILLA GROVE: ① NW 8 mi., the Hall Mine—**Lazulite**, **Hematite**, **Pyrite**, **Turquoise**; ② W, toward Bonanza along Kerber Cr., in the Cochetopa Hills: (a) at NW end of the San Luis Valley, alt. 9,500' to 10,000', area mines—**Bornite**, **Chalcopyrite**, **Enargite**, **Galena**, **Pyrite**, **Sphalerite**, **Stromeyerite**, **Tennantite** (in gangue of **Barite**, **Calcite**, **Quartz** and **Rhodochrosite**), some **Bismuth** (Cosalite), **Gold**, **Fluorite** with **Tellurides** in some veins in N part of dist; (b) Los Ochos Mine, (Sec. 4, T. 47 N, R. 2 E), follow Rte. 114 S from jct. with US 50, W of Parlin for 12 mi., then turn E 2 mi. to mine—**Autunite**, **Johnnite**, **Torbernite**, **Uraninite**, **Uranophane**; ③ N on Hwy. 285 to rd. W to Bonanza, where rd. turns N walk across Kerber Cr., in canyon—**chalcedony**; ④ return to rd., pass ranch, N of Hayden's Peak—**Rhodochrosite**.



SAN JUAN COUNTY

AREA: ① dumps around Chattanooga and along Cement Cr.—**Huebnerite**; ② Engineer Mt., area—**jasper** and green **obsidian**.

SILVERTON: ① S 3 mi. at Molas Divide, area—**Pyrolusite**; ② W 3 mi., mines—**Chalcopyrite**, **Tetrahedrite**, etc.; ③ just NE on US 550, at Animas, and covering both sides of the Animas R.—**Barite**, **Chalcopyrite** (in Quartz), Gold-bearing **Pyrite**, **Huebnerite**, **Gold**, **Lead**, **Silver**; ④ NE 4 mi., the Senorita Mine—**Azurite**, **Malachite**, etc.; ⑤ N on US 550 to the foot of Red Mt. Pass, area—**Galena**, **Pyrite**, **Sphalerite**; ⑥ Howardsville quadrangle, the Ruby Mine, with turnoff at Middleton—**Huebnerite** crystals, **Quartz** crystals; ⑦ N, at Eureka, the Sunnyside Mine (8.1 mi. NE of Silverton) —**alabandite**, **Alleganyite**, **Friedelite**, **Helvite**, **Rhodonite**, **Rhodochrosite**, **Tephrite**, **Gold**, various **sulfide minerals** of Copper, Lead, Iron, Silver and Zinc; ⑧ N 8 mi., Red Mts., area

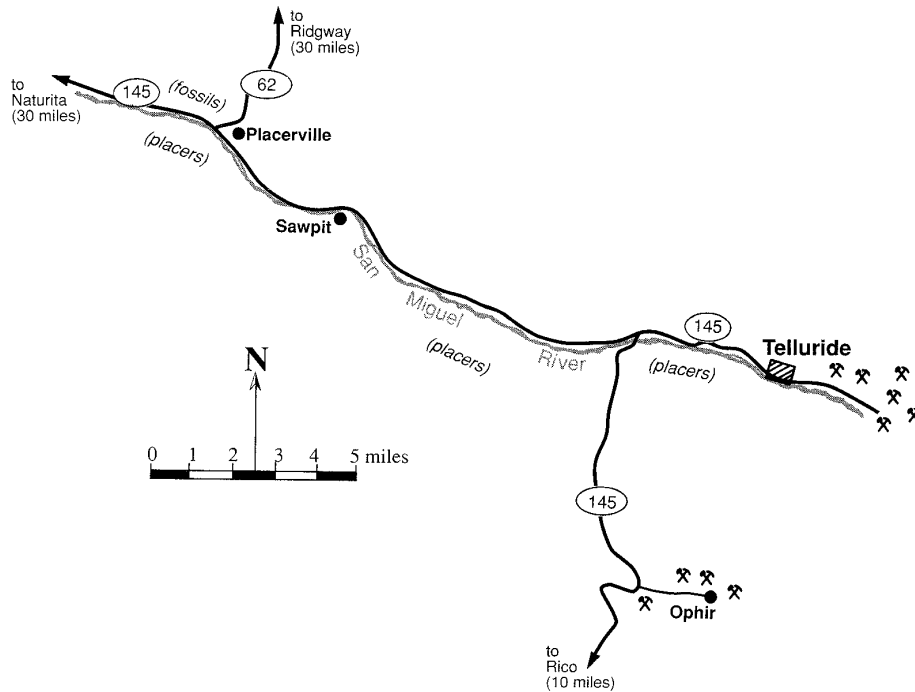


Colorado

surfaces—**Enargite, Pyrite** and **Quartz** crystals; ⑨ E 19 mi., mostly by trail, and 50 mi. W of Creede (Mineral Co.), at Bear Cr. in very rugged terrain—**Gold, Silver Telluride** (possibly Petzite).

SAN MIGUEL COUNTY

OPHIR, W, at Mt. Wilson (alt. 14,246'), with more important mines on the W slope of adjoining Wilson Peak (alt. 14,017 ft.), at head of Big Bear Cr.—**Calcite, Arsenopyrite, Chalcopyrite, Fluorite, Galena, Huebnerite, Molybdenite, Siderite, Sphalerite, Stibnite, Tetrahedrite**, and **Gold** bearing pay streaks.



TELLURIDE: ① E, to head of San Miguel R., at Upper San Miguel, alt. 10,000' to 12,000', many old mines—**Argentite, Calcite, Pyrite, Chalcopyrite, Galena, Gold Silver, Rhodonite, Rhodochrosite**; ② SW 9 mi., at Ames mining area extending E for 6 mi. to Iron Springs—**Gold** bearing **Quartz** and **Pyrite, Galena, Molybdenite, Sphalerite, Tungsten**; ③ NW 14 mi., Lower San Miguel (Placerville, Sawpit, Newmire), area placers—**Gold**.

SUMMIT COUNTY

AREA, near N Co. line along Rte. 9, the Big Four Mine (16 mi. S of Kremmling in Grand Co.)—**Galena, Sphalerite**, etc.

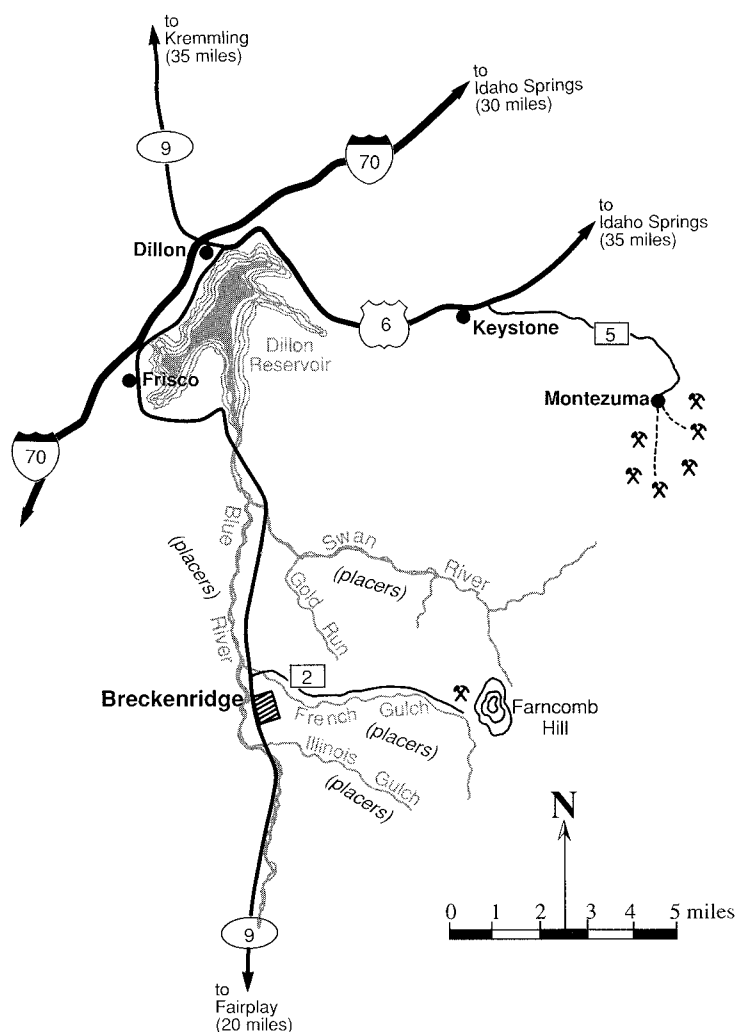
BRECKENRIDGE: ① E and NE in area of about 5 sq. mi., many old mines—**Argentite, Calcite, Pyrite, Chalcopyrite, Galena, Gold, Silver, Rhodonite, Rhodochrosite**; ② Farncomb Hill, 5 mi. E in upper French Gulch—crystallized **Gold**.

FRISCO (4 mi. SW of Dillon), area mine dumps—**Galena, Pyrite, Quartz, Siderite, Sphalerite**.

KOKOMO (Tenmile, Robinson, 19 miles NE of Leadville in Lake Co.), with many mines along valley of Tenmile Cr. for 2 to 3 miles NE and 5 miles SW to Robinson—**Barite**,

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Chalcopyrite, Galena, Marcasite, Pyrite, Pyrrhotite, Sphalerite (Marmatite), Rhodonite, Rhodochrosite.

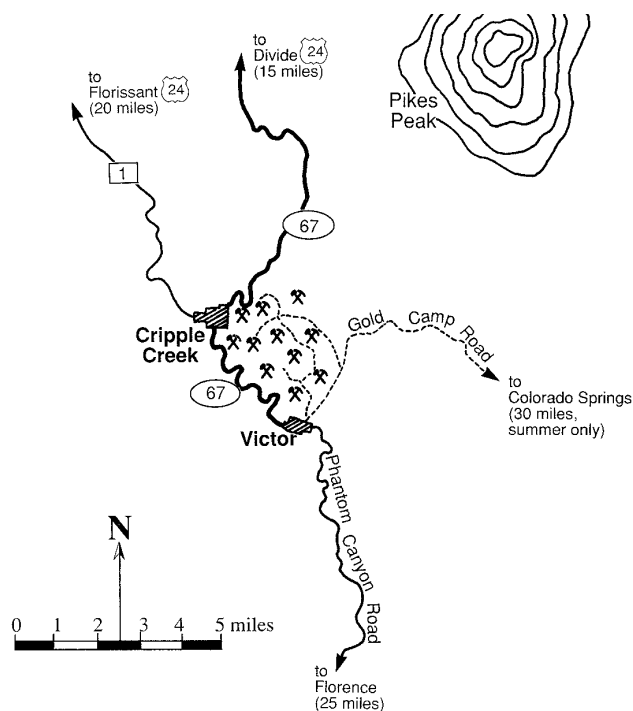


MONTEZUMA (Snake River, Peru), the mineralized area extending E 2 to 5 mi. to the Continental Divide, readily accessible, many old mine dumps—**Bismuth sulfides, Pyrite, Chalcopyrite, Galena, Gold, Silver sulfides, Tennantite, Tetrahedrite**, with gangue minerals of **Ankerite, Barite, Calcite, Manganosiderite, Quartz** and **Sericite**.

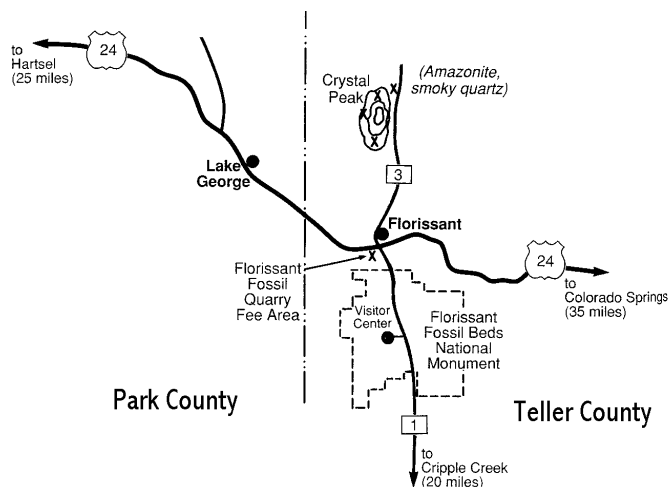
TELLER COUNTY

CRIPPLE CREEK: ① area mines (see next page)—**Calaverite, Krennerite, Gold** and **Silver Tellurides, Turquoise**; ② N of the Co. hospital, on slopes of Mineral Hill—**gem** minerals (wide variety).

Colorado



FLORISSANT: ① just N of town, area—**Amazonite**, **Smoky Quartz** crystals, **Topaz**; ② N 2 mi., at (a) Crystal Peak (a 9 sq. mi. region around the peak, showing hundreds of pegmatite exposures with many great and small mines, as well as adjacent areas of similar exposures in the Pikes Peak granite) —**Amazonite**, **Beryl**, **Cassiterite**, **Columbite**, **Feldspar**, **Fluorite**, **Goethite**, **Hematite**, **Limonite**, **Muscovite** mica, **Quartz** crystals, **Phenakite**, **Pyrite** and **Topaz**; (b) ½ mi. NW of Crystal Peak, area (see below) —**Amazonite**, **Quartz** crystals and white **Topaz**; ③ S 2.4 mi. via US 24 and Rte. 143 toward Cripple Creek, entrance to Pike Petrified Forest, area outside park boundaries broad and productive, especially in rd. cuts and banks—gem quality **petrified wood**; ④ Black Cloud pegmatite mine, (between Sec. 9 & 10, T. 13 S, R. 70 W), about 600' N of US 24 between Florissant and Divide and about 5 mi. E of Florissant—**Bastnaesite**, **Fluocerite**.



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GOLDFIELD, N, at Pikes Peak (alt. 14, 110'), regional granite outcrops covering some 1,000 sq. mi. in several counties are laced with pegmatite dikes containing a great many species of gems, crystals, minerals—**Amazonite**, **Quartz** crystals, **Topaz**, **Tourmaline**, etc.

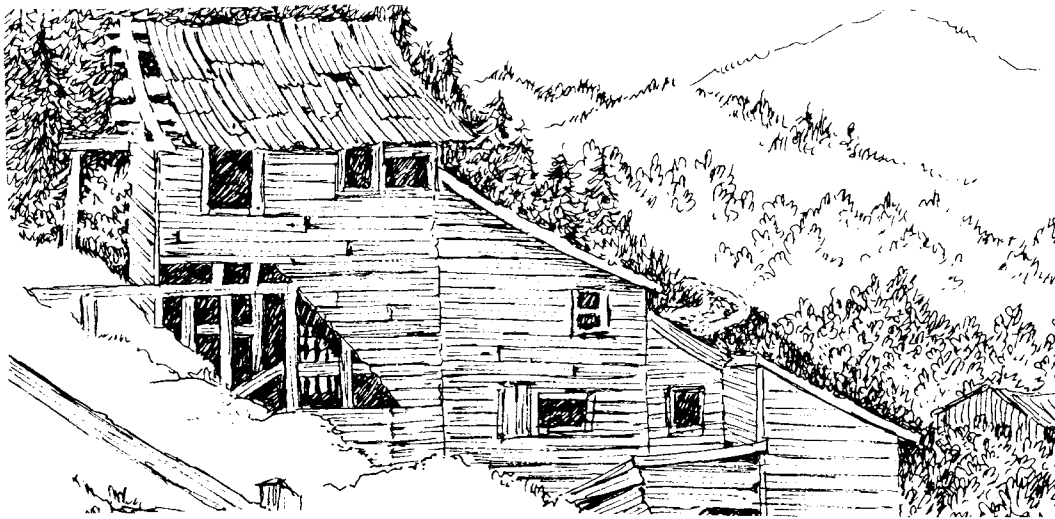
WELD COUNTY

RAYMER (9 mi. W of Stoneham), N 14 mi. on gravel rd. to old community of Kalouse, area—**agate**, **jasper**, **petrified wood**.

STONEHAM, E to jct. of Rte. 14 & 71, take Rte. 14 for 1.1 mi., turn N at crest of hill and go 4.1 mi., turn right on ranch rd. toward "Chalk Bluffs," area of bluffs and badlands—**Barite** crystals, **Barite** roses, **Calcite** crystals, fluorescent opal coating on some specimens.

YUMA COUNTY

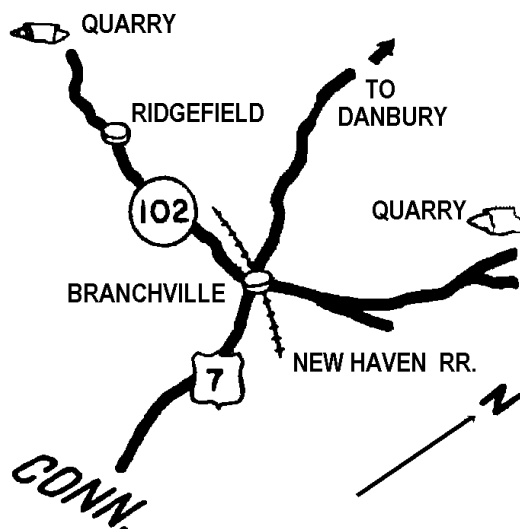
AREA, SE corner, along the S Fork of the Republican R. (20 mi. N of Burlington to Kit Carson Co.), broad area—**agate**, **chalcedony**, **jasper**, **opal** (mossy, opaque, white).



CONNECTICUT

This 60 by 95 mile state is about equally divided into three physiographic areas, offering the visitor a surprisingly varied topography. The eastern and western highlands are separated by the fertile Connecticut River Valley, composed mainly of Triassic black shale sediments. Along both sides of the valley basalt sills outcrop prominently in vertical cliffs. The surface of the highlands is exceedingly rugged, showing very little level ground. The skyline presents a remarkably straight and nearly level horizon (an ancient eroded peneplain) with a few knolls exceeding 2,000 ft. and culminating in the extreme northwest corner at Mount Bear, 2,355 ft.

Numerous mines and quarries dot the Connecticut countryside. From them interesting minerals, some fossils, and not a few gemstones can be gathered. Indeed, the basalt sills yield gem quality Prehnite, while the many pegmatite exposures have long been mined for commercial minerals, although stone and clay are the state's chief mineral products.



FAIRFIELD COUNTY

BRANCHVILLE: ① area deposits—**Eucryptite** (fluorescent), **Uraninite**; ② the Old Feldspar Quarry, a short distance NE of Branchville, work on dump required to uncover fresh material—**aventurine**, **Golden Beryl**, **Columbite**, **Mica** (curved), **Pollucite** (fluorescent), **Quartz** (rose, smoky) and **Kunzite Spodumene** (fluorescent); ③ W of Branchville in a pegmatite, a short distance out of Ridgefield, CT 102, W 1½ miles from stoplight in Ridgefield, then turning N, crossing a bridge, and take dirt rd. to left just beyond bridge, drive to end and park and hit trail ¼ mi. to area pit and dump—**Beryl** and **Rose Quartz**.

BROOKFIELD, area deposits and mines—**Calamine** (with Galena), **Cerussite** (on Galena), **Pyromorphite** and some **Sphalerite**.

DANBURY, numerous area pegmatite outcrops—**Graphite**.

GREENWICH, some area outcrops—**soapstone** (good carving variety).

A Location Guide for Rock Hounds in the United States

MONROE: ① some area pegmatite outcrops—**Tourmaline**; ② Lane's Mine—**Arsenopyrite**, native **Bismuth**, **Pyrite**, **Sphalerite** and **Wolframite**; ③ NE of East Village beyond old canal in feldspar quarry—**Rose Quartz**.

NEWTOWN, area outcrops—**Pyrite**.

REDDING, area pegmatite outcrops—**Graphite**.

RIDGEFIELD, N on Hwy. 35 to Farmingville rd. then E to new road, take N and path past ballpark NW to exposure—**Quartz**.

TRUMBULL: ① area exposures—**Apatite** (fluorescent), **Chalcopyrite**, **Wolframite**; ② the Long Hill tungsten mine (1 mi. S of RR station) —**Calcite**, **Fluorite** (used as a commercial flux), **Pyrite** cubes, **Scheelite** (fluorescent), blue **Topaz** crystals.

WILTON, an area lead mine—**Arsenopyrite**, native **Bismuth**, **Galena**, **Pyrite**, **Wolframite**, etc., in **quartz**.

HARTFORD COUNTY

BRISTOL: ① area granite gneiss exposures—**Chalcopyrite**; ② Bristol Copper Mine —**Bornite**, **Chalcocite** crystals (excellent shape).

CANTON, Hwy. 44 E for ¼ mi., then East Hill rd.. N to a road Left and hike to area in and near stream where quartz veins are exposed—**Amethyst**.

EAST GRANBY, at the Roncari Quarry—gem **Datolite**.

FARMINGTON: ① area land surfaces—**agate**, **Prehnite**; ② area rock exposures—native **Copper**.

GLASTONBURY, ① Area feldspar quarries—**Columbite** and **Feldspar**; ② Isenglass Hill rd. E from Hwy. 17 to Thompson Hill rd., take Old Gastonbury rd. ½ mi. N to old truck entrance Left to Simpson Quarry—**Aquamarine** and **Smoky Quartz**; ③ N of Isenglass Hill rd. on Hwy. 17 about 4 mi. is a rd. E to dumps of the Howe quarry, a good location for beryl—**Beryl** and other **pegmatite minerals**; ④ E on Isenglass Hill rd. to Thompson Hill rd, S to Cotton Hill rd E, stop at power lines and hike N uphill to the Case quarries—**Beryl** and other **pegmatite minerals**.

GRANBY, the Simsbury Mine—**Chalcocite**, **Cuprite** and **Malachite**.

MERIDEN, NW 1½ mi., area quarries—**Amethyst** and **Quartz** crystals.

ROCKY HILL, area copper deposits and prospects—**Azurite** and **Bornite**.

SOUTH GLASTONBURY, in area pegmatite outcrops—**Molybdenite**.

UNIONVILLE, 1½ mi. NE in road cut S of Biglow Pond—**Feldspar**, **moonstone** and **Cordierite**.

WINDSOR, area slate exposures—**Pyrite**.

LITCHFIELD COUNTY

BARKHAMSTED, area outcrops—**Actinolite**, **asbestos** and **soapstone**.

BRADLEYVILLE, at Prospect Hill—**Chalcopyrite**, **Pyrite** and **Pyrrhotite**.

CORNWALL, W section, pegmatite outcrops—**Graphite**.

LAKEVILLE, the Davis and Orehill mines—**Limonite** (bog iron ore).

LITCHFIELD (and Southbury), area exposures of Mica schist—**Corundum**, **Pyrite**, **Staurolite** (*fairly crosses*) and **Talc**.

MORRIS, take path from Hwy. 109 to S end of Morris reservoir, in quarry to W—**Rose Quartz**.

NEW HARTFORD, area deposits—**Actinolite** and **asbestos**.

NEW MILFORD, N 13° W 5½ mi. at Upper Merryall, the George Roebling or Merryall Mine—**Aquamarine**, **Golden Beryl**, **Biotite**, **Feldspar**, **Garnet**, **Smoky Quartz**, **Muscovite** Mica and black **Tourmaline**.

NEW PRESTON, area iron mines—**Magnetite**.

Connecticut

ROXBURY, the Old Iron Mine at Mine Hill—**Chalcopyrite**, **Galena**, **Pyrite** cubes, **Pyrrhotite**, **Quartz** (crystals & opalescent), **Siderite** and **Sphalerite**; ② from Hwy. 67 and 199 jct., go N on Hwy. 199 3.6 mi., turn Left and Left again at a small park, then 1.6 mi. to park entrance, park and take path left to area—**Kyanite**.

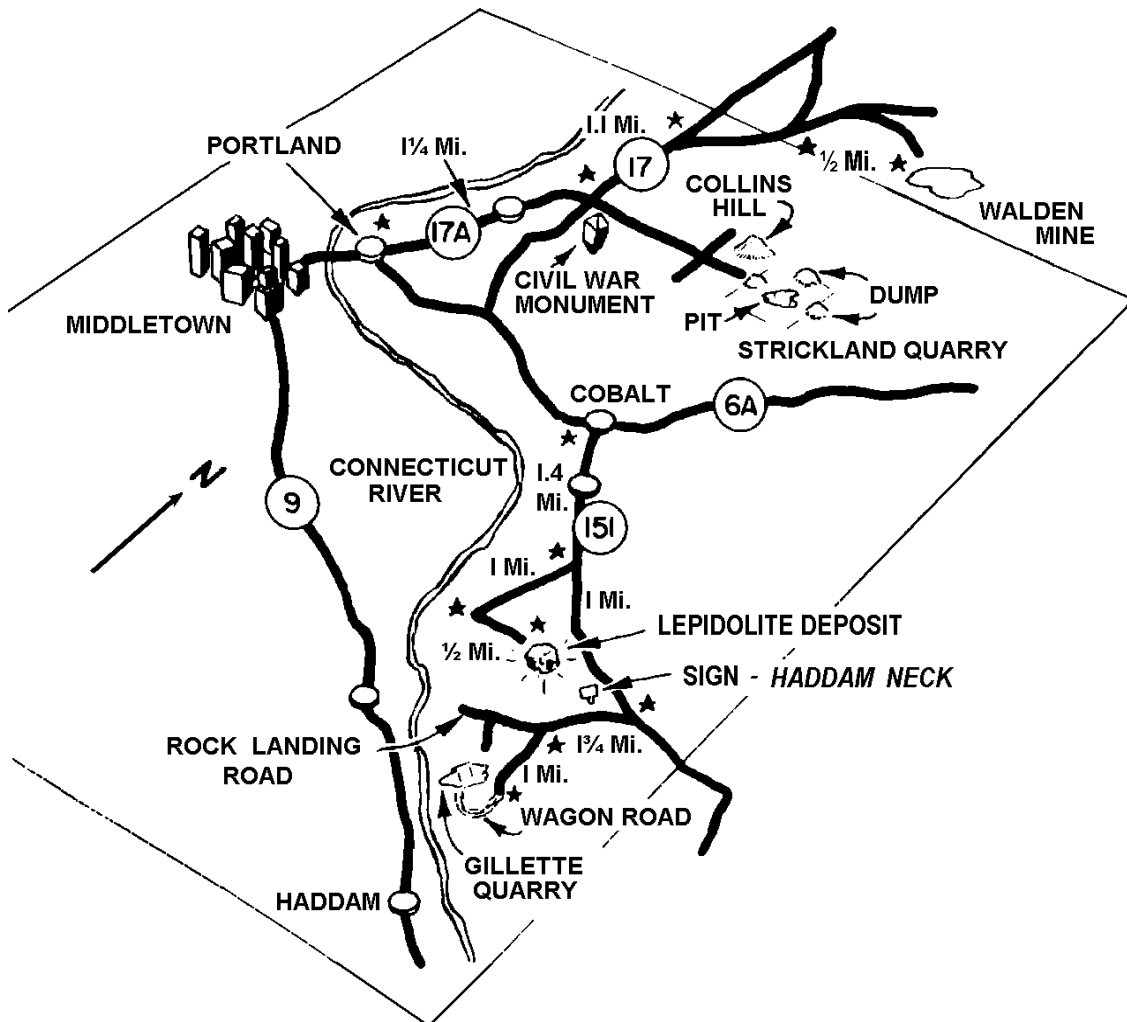
ROXBURY FALLS, SE 0.8 mi. from Hwy. 199, turn off E on rd. to Green farm—**Garnets** in dump, **Staurolite** deposit beyond farmhouse (fee).

SALISBURY (and Sharon), large area deposits, mined—bog iron ore, **Limonite**.

TORRINGTON (and Woodbury), area basalt sills—**agate** nodules and **Prehnite**.

WINSTED, area quarry—**Bornite**.

WOLCOTT, area deposits—**Bornite**, **Chalcocite** and **Malachite**.



MIDDLESEX COUNTY

CHATHAM, the old Cobalt-Nickel Mine, in small quantities—**Arsenopyrite**.

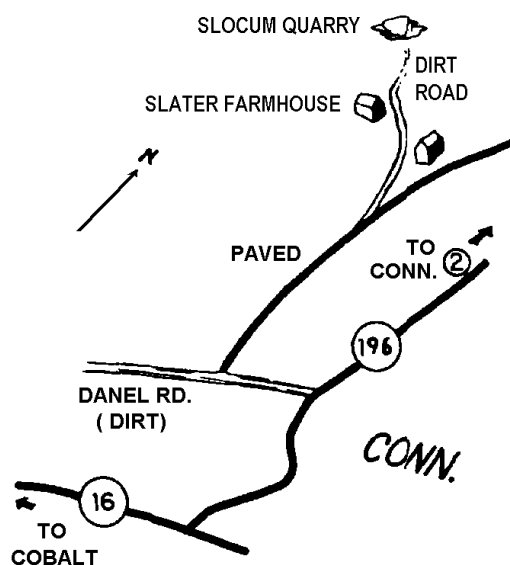
EAST HAMPTON, the Slocum Quarry, Hwy. 196 SW to Daniel rd., then to paved road N. continue 2 mi. to fork, take Left fork past farmhouse (fee)—**Beryl** (Golden and Brown) and **Rose Quartz**. (see map page 98)

HADDAM (Twp.): ① area gneiss quarries—**Molybdenite**; ② area mines—**Bismuthinite** (with some **Chrysoberyl**), and some **Cassiterite** crystals; ③ SSE of Middle Haddam, the Gillette Quarry on the E bank of the Connecticut R., Hwy. 9 to Hwy. 82 exit, across the river to E Haddam, then N on Hwys. 149 & 151 to Haddam neck, a road from Haddam Neck leads to quarry near river, Collect in dumps (fee)—**Amazonite**, **Aquamarine**, **Beryl**, **Chrysoberyl**, **Garnet**, **Quartz** crystals and **Tourmaline**;

④ Take Jail Hill rd. to Turkey Hill Mine sign (fee)—**Goshenite beryl**, **Smoky Quartz** and **Tourmaline**; ⑤ Haddam Neck, area quarries—**Feldspar** (fluorescent), **Cordierite** and **Fluorite**.

MIDDLETOWN: ① area mines—**Galena**, **Chalcopyrite** and **Sphalerite**; ② various area quarries, especially ½ mi. W of Benvenue at the Riverside Quarry on S bank of the Connecticut R.—**Aquamarine** and **Beryl**; ③ White Rock Quarry—**Beryl** and **Rubellite** tourmaline; ④ at an old lead-silver mine—**Fluorite**, **Galena** and native **Silver**. (These minerals found at several localities and were mined for lead in Colonial and Revolutionary War times and, for a few years, before the Civil War for **Silver**.)

PORTLAND: ① S 1 mi. from Portland Reservoir, the Pelton Quarry—**Citrine** and **Quartz** (rose, smoky, and clear crystal); ② NE 2½ mi., on W side of Collins Hill, near summit, the Andrews' and Strickland quarries—**Apatite** (fluorescent), **Aquamarine**, **Beryl**, **Citrine**, **Bismuthinite**, **Columbite**, **Feldspar** (fluorescent), **Morganite**, **Quartz** (rose, smoky), **rock crystal**, **Spodumene** (fluorescent), **Tourmaline** and **Uraninite**. (This site NE of Portland, has produced gemstones of varied colors. Take CT. 17A out of Portland to a brown Civil War monument. Turn right their and keep right until the road ends in a T. Keep straight ahead up a rough rd. on Collins Hill to Quarry. The pit, before it flooded was a choice collecting spot and the dumps have yielded many excellent specimen.) ③ SE of the Strickland quarry and W of a clearing for power lines are the Hale Walker quarries, reached by taking Collins Hill rd. S and a road E to the cleared strip then N—**Aquamarine**; ④ the Walden Gem Mine—**Pollucite**.



NEW HAVEN COUNTY

BETHANY, N part, outcrops—**Graphite**.

CHESHIRE: ① area Triassic sandstone exposures, and in small quantities in other formations—**Barite**; ② SE section—**Chalcocite**. (The Cheshire barite was formerly mined to mix with white-lead paint.)

DERBY, area mines—**Arsenopyrite**.

EAST HAVEN, at Cinque quarry back of Weeping Willow restaurant on Laurel St.—**Amethyst** and **Smoky Quartz**.

Connecticut

GUILFORD: ① area around Guilford and East Haven—**agate**; ② Hungry Horse Hill, outcrops—**Iolite** cordierite.

HAMDEN: ① area Triassic sandstones or trap—native **Copper**; ② Mt. Carmel, mines—**Bornite** (with diabase) and **Chalcocite**.

MADISON, NW, area mines—**Magnetite**.

MERIDEN, (a) Hwy. 71 to road cut in Hwy. 6—**Amethyst** and **Prehnite**; (b) in reservoirs around Hubbard Park—**Quartz**

MILFORD, ① area quarries—**serpentine** (*Verd Antique*) ② US 1 from turnpike, exit 39 for 2.3 mi. NE past Hwy. 152, park near thrift shop and walk W to dig—**serpentine** (*Verd Antique*).

ORANGE, around Lamberts Mine and in small quantities elsewhere—**Chalcopyrite**.

OXFORD, area mines—**Arsenopyrite**.

SOUTHFORD, 1¾ mi. SW in quarry—**Beryl** and **Rose Quartz**.

STONY CREEK, area quarries—**Apatite** and **Spodumene**.

WALLINGFORD, Exit 15 from Wilbur Cross parkway, then E to Hwy. 68 and N to New Haven Traprock quarry—**Amethyst**.

NEW LONDON COUNTY

BRANDON, NEW LONDON, ONECO, area quarries—**Apatite** and **Spodumene**.

COLCHESTER, area iron mines—bog **iron ore**.

NORWICH, area outcrops—**Corundum** (sparingly with **Sillimanite**).

OLD SAYBROOK, on beach on W side of point toward Long Island Sound—**agate** and **moonstone**.

TOLLAND COUNTY

BOLTON, old area quarries in Mica schist—**whetstone**.

HEBRON, area mines—bog **iron ore** and **Limonite**.

STAFFORD: ① area iron mines—bog **iron ore** and **Limonite**; ② area schist exposures—**Quartz** (crystal, rose) and **Staurolite**.

TOLLAND, area schist exposures—**Quartz** (crystal, rose) and **Staurolite**.

VERNON, area exposures of schist—**Quartz** (crystal, rose) and **Staurolite**.

WINDHAM COUNTY

ASHFORD, NW corner, a quarry—**Graphite**.

WILLIMATIC: ① area iron mines bog **iron ore** and **Limonite**; ② area pegmatite outcrops—**Topaz**.

Delaware

DELAWARE

Delaware lies within the province of the Atlantic Coastal plain to the east of the Appalachian mountain system. The Fall Line, which marks the border between the upland Piedmont region and the Coastal Plain, passes through the northernmost part of the state south of Newark. Along the Fall Line the gneisses and marbles of possibly Precambrian age disappear under the Cretaceous and younger sediments which blanket most of the state.

KENT COUNTY

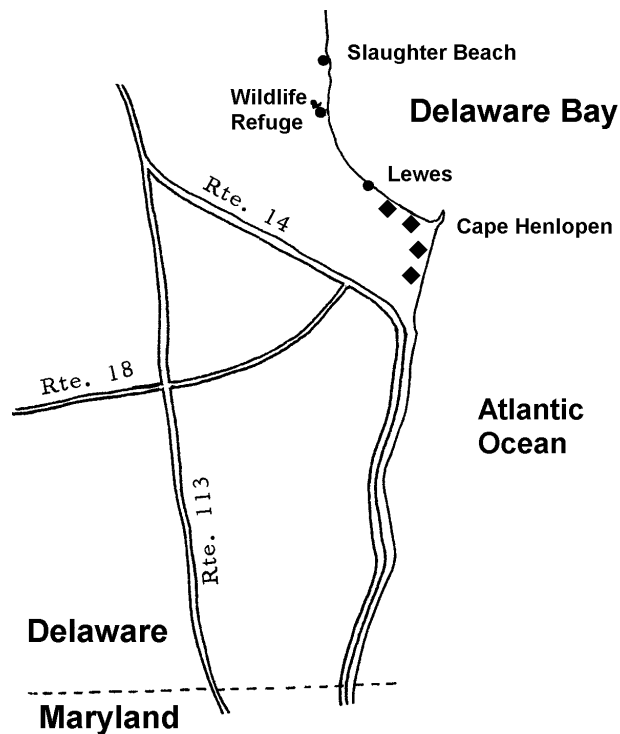
EAST DOVER, area mined deposits—bog iron ore (**Limonite**).

NEW CASTLE COUNTY

CHANDLERS HOLLOW, area outcrops, in small quantities—**Corundum**.

NEWARK, at Chestnut Hill, a deposit—**Limonite**.

WILMINGTON: ① NE, in feldspar quarries—**asbestos**, **Feldspar**, **serpentine**; ② NW 6 mi., area—**serpentine**.



SUSSEX COUNTY

AREA, various deposits, some mined—**Limonite** and **ocher**.

CAPE HENLOPEN, on beach on both sides of point—**Quartz** crystals (*Cape May Diamonds*).

LAUREL, S 2 mi., at Little Creek—**bog iron ore**.

FLORIDA

Although Florida is a land of comparatively slight relief, its surface features range from the nearly level plain in the coastal region and the Everglades sea-level swamps to the deeply dissected uplands of the northern counties, a region of rolling, pine-clad hills. In this region much of the surface has been trenched by steep-walled valleys. The altitude of the entire subtropical peninsula varies from tidewater to about 200' at various points along the ridge which forms the central backbone and to about 300' near the northern boundaries of Gadsden, Walton, Santa Rosa, and Escambia counties. By contrast, the southern region comprises an area about 150 miles long by 100 miles wide, all with an altitude less than 50 feet above mean sea level.

ALACHUA, MARION, SUMTER COUNTIES

AREA: ① regional limestone quarries—**chert** (boulders, concretions); ② regional road and RR cuts, building excavations, etc.—gemmy **chert**, **fossil ivory**.

BRADFORD COUNTY

LAWTEY, nearby at the Highland Mine—**Ilmenite**, **Zircon**.

STARKE, area, E.I. du Pont de Nemours and Co., Trail Ridge Plant—**Staurolite**.

CITRUS COUNTY

AREA, the limonite quarries, road and RR cuts, excavation, etc.—**chert**, **fossil ivory**.

CRYSTAL RIVER, area limestone quarry seams and vugs—**Calcite** crystals (clear, pale yellow), drusy **quartz**, **chert**, **fossils**.

DUVAL COUNTY

SOUTH JACKSONVILLE, the Skinner Mine—**Ilmenite**, **Rutile**, **Zircon**.

GADSDEN COUNTY

AREA, along the Georgia line, many old fuller's earth mines, in sandy strata—**silicified wood**, **fossils**.

JAMISON, area NW, N, and NE, in fuller's earth pits—**silicified wood**, **fossils**.

QUINCY-HAVANA, area fuller's earth mines and pits: ① 8 mi. N of Quincy and NE of the Willacoochee R. on E side of Rte. 65; ② at the GA line, Rte. 159 turns E toward Jamison, two mines; ③ at Havana, a N turn onto US 27 leads to a fuller's earth mine and plant—**silicified wood**, **fossils**.

HAMILTON COUNTY

JASPER, area phosphate pits—**gem coral** (fossil).

WHITE SPRINGS: ① area phosphate pits—**gem coral** (fossil); ② Stephen Foster Memorial: (a) area—silicified coral heads (to 4' in dia.); (b) banks of the Suwannee R.,

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beginning at the memorial and extending for some 12 mi. upstream—**agatized coral heads**; (c) all tributary creeks of the Suwannee R. from the right side—**coral heads**.

HERNANDO COUNTY

BROOKSVILLE, area dragline operations, cuts, quarries, excavations, etc.—**Calcite** (crystals, cave forms), **Echinoid geodes** (crystal interiors), **silicified coral heads** (golden calcite as petrifying agent).

HILLSBOROUGH COUNTY

TAMPA: ① Ballast Point (and Davis Is.) area, in the City Park—**agatized coral heads, carnelian-red geodes**; ② regional shores at low tide—**agatized coral**: (a) access via Bayshore Blvd., and (b) access via Interbay Blvd.—**coral, chalcedony, enhydros, fossil shell** (chalcedony replaced); ③ N, along the Hillsborough R., banks and breaks—**brain coral, finger coral, agate**.

INDIAN RIVER COUNTY

AREA, the Florida Minerals Co. and Rutile Mining Co. (Jacksonville Mine)—**Ilmenite, Rutile, Zircon**.

VERO BEACH, the Winter Beach Mine, Sec. 4, T. 32 S, R. 39 E, the Florida Minerals Co.—**Zircon**

JACKSON COUNTY

AREA: ① many inactive quarries; ② area stream and river banks—**fossils, chert**; ③ Crystal River formation, area exposures—**crystal lined vugs**.

COTTONDALE, area streams and creeks, banks—red fossiliferous **chert**.

LEE COUNTY

FT. MYERS BEACH, area deposits around Estero Bay, used as mineral paint—**ochers**.

LEVY, LAFAYETTE, GILCHRIST, SUWANNE COUNTIES

AREA: ① stream gravels, pits, quarries, excavations—gemmy **chert, agatized corals, silicified wood**; ② exposures along the Suwannee R.—gemmy **silicified corals**; ③ Cross State Barge Canal, banks—**fossils, silicified coral**.

MANATEE-MARION COUNTIES

AREA, old fuller's earth pits—**silicified wood, fossils**.

MANATEE-SARASOTA COUNTIES

AREA, all along the Gulf beaches: ① especially from Tarpon Springs to Ft. Myers—**fossil corals, shark teeth, sponges, manatee bones, etc.**; ② Englewood Beach, one of the most productive areas—**fossil corals, shark teeth, sponges, manatee bones, etc.**

Florida

PASCO COUNTY

AREA, banks of rivers and streams from Bailey's Bluff E to the Withlacoochee R. near Dade City—**silicified coral**.

BAILEY'S BLUFF, area quarries, excavations, etc.—**silicified coral, chalcedony**.

NEW PORT RICHEY: ① dredger tailings of the Flor-a-Mar, and ② area quarries and excavations abundant—**agatized coral, chalcedony**, pseudomorphs after **Calcite** and **Selenite**, crystal lined shell pseudomorphs, crystal lines sea-worm tunnels.

PINELLAS COUNTY

CLEARWATER, on several offshore islands—**silicified coral**.

DUNEDIN: ① banks of the Caladesi Causeway—**chalcedony** roses (deep blue black); ② W end, tidal exposures—**coral geodes**.

PINELLAS-HILLSBOROUGH COUNTIES (N to Georgia line)

AREA: ① all beaches, and ② all regional excavations or dredging operations—**agate, carnelian, chalcedony, chert, fossil coral**, etc.

POLK COUNTY

AREA, phosphate quarries and pits, dredging operations, etc.—gemmy **fossils, Gypsum, petrified wood, Uranium** minerals, **Vivianite**.

BARSTOW: ① SW corner of city limits, a phosphate mine; and ② S, between Rte. 35 and the Peace R. and N of Ft. Meade, a phosphate mine—**Gypsum, Uranium** minerals, **Vivianite**.

BRADLEY JCT., E and SE along rd. encircling Lake Hookers Prairie, phosphate mine—**Gypsum, Uranium** minerals, **Vivianite**.

FORT MEADE, E 1½ mi. on N side of Rte. 630, a phosphate mine—**Gypsum, Uranium** minerals, **Vivianite**.

LAKELAND: ① E 2 mi., at Saddle Cr.: (a) a phosphate mine, and (b) 1 mi. S of the mine rd.—**Gypsum, Vivianite** (crystals, crusts), **Uranium** minerals; ② 2 mi. NE of lake Parker between Rte. 33 and US 92, a phosphate mine—**Gypsum, Vivianite** (crystals, crusts), **Uranium** minerals; ③ NE 7 mi., area—**chalcedony, silicified coral**.

MULBERRY: ① area phosphate mines—**Gypsum, Vivianite** (crystals, crusts), **Uranium** minerals; ② N side of Rte. 60 toward Barstow, phosphate mines—**Gypsum, Vivianite** (crystals, crusts), **Uranium** minerals.

PLANT CITY, S 1 mi. on Rte. 39, then 2 mi. E on a mine rd., a phosphate mine—**Gypsum, Vivianite** (crystals, crusts), **Uranium** minerals.

ST. JOHNS COUNTY

AREA: ① beaches—**Coquina**; ② in exposures from above St. Augustine to below Cocoa: (a) along the beaches, and (b) regional quarries—**Coquina**.

SUWANNE COUNTY

DOWLING PARKS, SE 5 mi., mine—**Malachite**.

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VOLUSIA COUNTY

SEVILLE, E 12 mi., and at several points on the Florida East Coast RR, in cuts—**Limonite**.

WASHINGTON COUNTY

AREA, stream banks, rd. cuts, abandoned quarries—**chert, flint**.

CHIPLEY: ① area fossiliferous limestone exposures, polishable—**chert-like limestone**; ② sinkhole and rd. cuts—**Calcite, chalk, chert**; ③ SW from Falling Water 1½ mi. on both sides of rd.—**chert**; ④ S of the airport, in a RR cut—**Calcite**.

GEORGIA

Georgia's nearly 59,000 square miles makes it the largest of the Atlantic seaboard states. It is situated at the southern end of the Appalachian chain of mountains. These ranges extend into the northeast corner where Brasstown Bald, a part of the Nantahala Mountains achieve the highest elevation in the state at 4,784 feet.

Beginning in the northwest, where the Lookout and Sand mountains loom over rich agricultural valleys, Georgia easily divides into five major physiographic provinces, each one formed during different geologic ages and under varied conditions: the Cumberland Plateau, the Appalachian Valley, the Appalachian Mountains, the Piedmont Plain (about 30% of the state), and the Atlantic Coastal Plain. Thus rocks of every geological age are exposed somewhere over the state's varied surfaces. The upland northern counties are heavily forested with hardwoods, merging into other forests of stately pines on the Piedmont. Beneath the highland forests lie some of the oldest crystalline rocks in the East, both igneous and metamorphic, strongly mineralized and dotted with once-rich abandoned mines.

Dividing the stratigraphically complicated Piedmont Plain from the coastal lowlands in the Atlantic Coast Fall Line, so named from the falls or rapids in rivers at places where they pass from the Piedmont crystalline rocks into softer and less resistant formations of the Coastal Plain. This Fall Line extends southwesterly across the state roughly on a line connecting Augusta, Milledgeville, Macon, and Columbus.

The first real Gold Rush in America occurred in Georgia following two simultaneous discoveries of **Gold** by Negro slaves in 1828, one on the Lovelady place near Loudsville in White Co. and the other on the Bear Cr. near Dahlonega in Lumpkin Co. Not only was placer and lode gold found in abundance here and elsewhere, but the early miners and prospectors panning the regional stream gravels discovered **Diamonds**, the largest a pale yellow crystal of 4½ carats picked up near Morrow Station in Clayton Co. in 1887. Since then, many fine diamonds have been found and are still being occasionally washed out of gold pans. Many other gem crystal species occur in pegmatite exposures, such as **Aquamarine**, **Beryl**, some Ruby-red **Corundum**, **Spodumene** and **Topaz**.

Georgia has been actively prospected for gold since colonial times, and the modern gold panner should concentrate his efforts in the known gold-bearing areas. Lode deposits usually consist of Quartz veins in solid rock, while placer deposits occur in a great many regional streams. Much of the colors are Fluor Gold, too fine to be retained in any commercial operation. The two most important gold belts include ① the Dahlonega Belt that extends from near Tallapoosa northeastward through Dahlonega Co. and Rabun Co., and ② the McDuffie County Belt extending through portions of McDuffie, Warren, Wilcox, and Lincoln counties. In many places, but most notable in the lode gold districts, numerous other colorful minerals occur in association with Gold, such as **Chalcopyrite**, **Galena**, **Pyrite**, **Pyrrhotite** and some **Sphalerite**.

BALDWIN COUNTY

MILLEDGEVILLE, at state farm—**jasper**.

BANKS COUNTY

COMMERCE, along Hwy. 59, 5 mi. E of Jackson-Banks Co. line—**Beryl**.

MAYSVILLE, area gravels along adjoining Co. line—rock **crystal**.

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BARROW COUNTY

WINDER, along rd. to Jefferson and 1½ mi. inside the Co. line in a Hornblende-gneiss exposure—**Beryl**, black **Tourmaline**.

BARTOW COUNTY

AREA, Saltpeter Cave, as float—**jasper**.

CARTERSVILLE: ① area barite pits—**Barite**, **Geodes**, **Goethite**, **Hematite**, **Limonite**, **Iron minerals**; ② area mines, as important producers—**Barite**, **Manganese**, **ocher**. Manganese deposits have a wide geographic distribution in NW Georgia, but most important occurrences are in the vicinity of Cartersville and Cave Springs (NW Polk Co. and SW Floyd Co.). ③ E 1 mi., extending in a N to S trending belt about 8 mi. long and less than 2 mi. wide, with its S end W of Emerson and about 2 mi. S of the Etowah R., many mines, prospects, and excavations—**ochers**.

EMERSON: ① extensive area deposits—**Barite**, **Graphite**; ② US 41 bridge over the Etowah R., area Barite pits—**Barite**, **geodes** (crystal lines).

KINGSTON, S, in area fields, streams, rd. cuts, etc.—**agate**, (banded, various colors), **jasper**.

BIBB COUNTY

MACON: ① at Holton Quarry, 7½ mi. NW—**agate**; ② N of Calloway airport at rd. jct.—**Beryl**.

BURKE COUNTY

GIRARD, along the GA side of the SC border—*Savannah River* **agate**, **chalcedony**, **Quartz gemstone**, **silicified oolite**.

CARROLL COUNTY

CARROLLTON: ① E 1.3 mi., in gravels of the Tallapoosa R.—**Rubies**; ② E 1.3 mi. and just off Rte. 166, vein exposures—**asbestos**, **Garnets**, **Olivine** crystals.

VILLA RICA: ① area, and ② at Reid's Mt., extensive deposits—**Pyrite**.

CATOOSA COUNTY

GRAYSVILLE, SE 1½ mi., in Knox dolomite exposed in an abandoned quarry—**Barite**, **Calcite**, **Fluorite** (purple cubes), **Galena**.

CHATTAHOOCHEE COUNTY

AREA: ① stream gravels—gemmy **chert**, **quartz** pebbles (pastel colors), **petrified wood**, **Pyrite**; ② rd. cuts, banks, cliffs—**Selenite** crystals.

COLUMBUS, SE section along Rte. 103 toward Buena Vista (in Marion Co.), area of Randall Cr. near Ft. Benning, as float over a broad area—**silicified wood**.

CUSSETA, NW 2 mi. on US 27, a rd. cut—**Selenite** crystals, decorative fossil **shark teeth**.

Georgia

CHATTOOGA COUNTY

GORE, N 6 mi., along lower slopes of Taylor Ridge—**Halloysite**.

SUMMERVILLE: ① S 2½ mi. on US 27: (a) along both sides of Hwy.—**agate**; (b) quarry on W side of rd.—**agate**, **chalcedony**, **chert**, **opal**; ② area of state fish hatchery on Cloudland Rd.—**agate** (cloudy, vivid red-banded); ③ W 3 mi. and 2 mi. N: (a) at the Marble Springs Quarry—**gemmy marble** (red and green); (b) E, in Taylor Ridge area—**agate**; ④ SE 3 mi., on left side of US 27N, on the Roland Hancock farm, a pit—**gemmy chert**.

CHEROKEE COUNTY

BALL GROUND: ① area: (a) local deposits—**talc**; (b) S and W of town, area fields, etc.—**Staurolites**; (c) numerous area mines—**Kyanite**; (d) the Bennett, Chapman and Hendrix mica mines—**Aquamarine**, **Beryl**, **Amethyst**, **Garnet**, **Smoky Quartz** crystals, black **Tourmaline**, etc. (the accessory minerals of all mica mines include Almandite garnet, Feldspar, black Tourmaline, etc.); (e) the Alexander and Cooley mines—opaque **Beryl**; (f) between town and Canton area—**Almandite** garnet; (g) harmony Church, area pegmatite outcrops—**Beryl**; (h) Hickory Flat, 2 mi. NE on rd. to Orange—**Corundum**; ② 1 mi. W of Fairview Church, on E side of Sharp Mt., area—**Staurolite**; ③ NE 2½ mi.: (a) the Cochran Mica Mine (1 mi. from the Cherry Grove School, near old tenant house) —**agate**, **Aquamarine**, **Beryl** (yellow, green), **Rutilated Quartz** crystals; (b) 1 mi. W of the school, exposed pegmatites— **Rutilated Quartz** crystals; ④ SW 3½ mi., near Four Mile Church and Shiloh Church, mines—**Kyanite**; ⑤ W 4½ mi., on N side of Bluff Cr., along Rte. 1 —**Staurolite**; ⑥ SE 7 mi., on the Etowah R., at the Creighton-Franklin Mine—**Gold**; ⑦ on the Oscar Robertson farm; and ⑧ on the James Spears farm (fee) —**Staurolite**.

CHEROKEE-PICKENS COUNTIES

NELSON (Pickens Co.), a 300 sq. mi. region surrounding this town contains many pegmatite dike mines—**Mica minerals**, **Quartz** crystals, **Aquamarine**, **Beryl**, black **Tourmaline**, etc. The most productive mining districts surround the communities of Holly Springs, Toonigh, Woodstock, Cumming, Arnold, Orange, Canton, Nelson, Ball Ground, Centerville, Jasper, Tate, Bethany Church, Dug Gap, Federal School, marble Hill, Dawsonville and Holcomb Post Office.

CLARKE COUNTY

AREA, many old mines and prospects—gemmy blue **Quartz**.

ATHENS, along Apls Rd. across from the airport, in a field—gem lime-green **Beryl**, **Quartz** crystals.

CLAYTON COUNTY

MORROW (13 mi. S of Atlanta, Fulton Co.): ① creek beds—**Diamond**; ② the Laurel Creek Mine—**Aquamarine**, **Beryl**, red **Corundum**.

COBB COUNTY

BELMONT HILLS, on Smyrna-Belmont Hills rd. ½ mi. out of Belmont, turn E for ½ mi. on dirt rd., in quartz exposure—**Quartz**.

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MARIETTA, area near the National Cemetery—banded **agate**, mossy **chalcedony**, **Kyanite**, **jasper**.

POWDER SPRINGS, S 2 mi., outcrop on Turner property—**Corundum**.

CRISP COUNTY

CORDELE, area fields, cut banks, etc.—moss **agate**, **jasp-agate**, **jasper**.

DADE COUNTY

RISING FAWN, S 1 mi., on E slope of hill—**Halloysite**.

DE KALB COUNTY

ATLANTA, Emory University, area pegmatite outcrops—**Quartz** crystals (clear, smoky).

BARNESVILLE, THOMASTON, area mines—many gemmy **minerals**.

BERMUDA, Rockbridge rd. to Macedonia church (near Stone Mt.), area—**Quartz** crystals.

LITHONIA: ① area quarries—**Calcite**, **Epidote**, **Fluorite**, **Garnet**, **Thulite**, **Tourmaline**, **Zeolites**; ② Rock Chapel Quarry, on N side of Arabia Mt.—**Calcite**, **Epidote**, **Fluorite**, **Garnet**, **Thulite**, **Tourmaline**, **Zeolites**; ③ N side of Arabia Mt.—gemmy **crystals**, **Tourmaline**, etc.; ④ Flat Rock Quarry—**Hyalite** opal; ⑤ Lithonia High School, N 60° W 1 mi. and 1 mi. NW of the Covington hwy. on the Philips rd., a pegmatite—green **Muscovite**, **Feldspar**, **Quartz**.

STONE MOUNTAIN: ① two area granite quarries—**Beryl**, **Feldspar**, **Hyalite** opal; ② area granite outcrops, in joints—**Uranophane** (thinly coated with Hyalite opal).

DODGE COUNTY

DUBOIS, EMPIRE, JAY BIRD SPRINGS, PLAINFIELD, Miocene exposures in all regional fields—**Tektites** (translucent, bottle green).

DOUGHERTY COUNTY

ALBANY, in Flint R.—**red jasper**.

ELBERT COUNTY

AREA: ① Rock Branch Church, old mica mine—**Beryl**; ② Harmony Church, area—**Aquamarine**; ③ Broad River pegmatite exposures—**Sillimanite**.

DEWEYROSE, ① at Antiock Hill, exposures—**Aquamarine**, **Quartz** crystal, **Amethyst**; ② 2 mi. N to W.B. Perkins place—**Amethyst**.

ELBERTON: ① area Sillimanite mines—**Muscovite**, **Sillimanite**. Mica-bearing pegmatites occur in Carolina gneiss between Elberton and Hartwell in Hart Co. The known mica district includes some 250 sq. mi., with most mining revolving around the old Chapman Mine in Elbert Co. Similar mines occur also in Madison Co. ② N 10 mi., on N side of Cold Water Cr.: (a) the Chapman Mica Mine, on N side of Cold Water Cr.—**Aquamarine**, **Garnet**, **Smoky Quartz** crystals, **Tourmaline**; (b) the nearby Alexander Mine—**Beryl**.

OGLESBY, 3 mi. distant on N side of the Little Broad R., the Yellow Mine—**Amethyst**, **Beryl**, etc.

Georgia

FANNIN COUNTY

AREA: ① stream beds, loose soil of fields, schist exposures, rd. cuts and banks, etc.—**Staurolites**; ② extreme N part of Co., a short distance from famed Ducktown copper mining dist. of TN (Polk Co.), area—**Copper minerals**.

BLUE RIDGE: ① take Copperhill Rd. 1.6 mi. to a sawmill, turn left for 1 mi. on a dirt rd. to Hackney farm (fee) —**Staurolites**; ② SW 4 mi., at the Bailey farm, area exposures—Kyanite; ③ W of Cole's Crossing—**Staurolite**.

MINERAL BLUFF: ① cross RR on Murphy rd. to Copperhill, along sides of rd. and adjoining forest—**Staurolite**; ② NW, at Windy Bluff, area—**Staurolite**; ③ ½ mi. SE of Union, from where a schist outcrop crosses Mill Cr.—**Staurolite**; ④ 1½ mi. NW of Hogback Mt., on the Thomas farm—**Kyanite** crystals, **Quartz** crystals; ⑤ S ½ mi., exposure—**Talc**.

FAYETTE COUNTY

FAYETTEVILLE, on the Homer Kellin farm, loose in field soil—gem **Amethyst** (some rutilated), **Rutilated Quartz**.

FLOYD COUNTY

HERMITAGE, E of Hermitage Jct. on Rte. 53 for 6 mi. (NE toward Calhoun in Gordon Co.), turn E at jct., many area mines—**Bauxite**, **chert**, **jasper**, **Marcasite**.

ROME: ① W on Rte. 20 to the Rice Springs Farms, area—botryoidal **chalcedony**, **geodes**, **Rose Quartz**, etc.; ② at the Ledbetter Quarry—**Calcite** crystals (some with pyrite inclusions).

FORSYTH COUNTY

CUMMING: ① area stream beds—**Ruby**; ② E 2 mi., a small placer ground—**Gold**; ③ E 6 mi. at the I.H. Gilbert farm—**Amethyst**.

OSCARVILLE: ① area rd. cuts, pegmatite outcrops—**Beryl**, etc.; ② N side of Silver Shoals-Oscarville rd. and E of jct. with rd. to Four Mile Church—**Beryl**, pegmatite **gemstones**.

SHELTONVILLE, area pegmatite outcrops—**Amethyst**, **Beryl**, **Quartz** (clear, smoky).

SUGAR HILL, the Simmons Mine—**Gold**.

FRANKLIN COUNTY

LAVONIA, area prospects and narrow lensy mica pegmatites crossing Lavonia-Royston rd. between Lavonia and Bowersville—dark green **Muscovite**, **Galena**, **Quartz**.

FULTON COUNTY

BIRMINGHAM, area of N part of Co. (old Milton Co.), many narrow pegmatite exposures—**Muscovite**.

ROSWELL, E 3½ mi.—**Corundum**.

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GORDON COUNTY

AREA, the Piedmont Mine, abundant sources—**Argentiferous Galena**.

RANGER, the Black marble Quarry on US 411—**Calcite**, green **Fluorite**, **Pyrite**, **serpentine**, **Talc**.

GWINNETT COUNTY

BUFORD, on Addison Lowe farm—**agate**, **moonstone**.

NORCROSS, Hwy. 141 N to crossing Chattahoochee, in pegmatite on Green farm—**moonstone**.

HABERSHAM (and RABUN) COUNTY

AREA: ① Alec Mt., mines in decomposed schists—**Corundum**, **Garnet**; ② Piedmont Orchard—**Margarite**, **Ruby** (brilliantly fluorescent).

CLARKSVILLE: ① area mines—**Xenotime**; ② S of the North Georgia Vocational School, in fields and woodlands leading to the Soque R.—**Kyanite**; ③ E ½ mi., stream gravels and banks, veins—**Kyanite**; ④ NE of the school on E side of the Soque R., in biotite-quartzite pegmatite—**Kyanite** crystals; ⑤ W 2 mi., area—banded **agate**, **chalcedony**, **jasper**; ⑥ N, in U-shaped belt about 30 mi. long and from 100' to ¼ mi. wide, most important area in GA for mining purposes—**Kyanite**. Veins and lenses of coarsely bladed Kyanite occur in mica schists, locally associated with quartz lenses and boulders of Kyanite.

DEEP CREEK, STONEPILE CHURCH, TURNERVILLE, WOODLANDS, many regional vein pegmatite exposures and mines—**Kyanite**.

HALL COUNTY

GAINESVILLE: ① area: (a) exposures along the Chattahoochee Ridge—**itacolumite** (flexible sandstone); (b) Glade Cr., gravels—**Diamond**; ② regional creeks emptying into the Chattahoochee R., many prospects and placers—**Gold**; ③ W 1 mi., in stream bed—**Corundum**; ④ NW 1½ mi. via Grape St., the Old Hope or Merck Mine, as good specimens—**Muscovite**, **Feldspar**, **Smoky Quartz**.

LULA, E 4½ mi. into Banks Co., on the Thurmond Standridge farm, a deposit—**Kyanite** crystals, **Sericite**, **Vermiculite**.

HANCOCK COUNTY

SPARTA: ① area fields, rd. banks, etc., as float—**carnelian**, **chalcedony**, **jasper**; ② W, along shores of the Sinclair Reservoir—**Quartz** gemstones.

HARALSON COUNTY

BREMEN, W 1½ mi.—**Quartz** crystals.

DRAKETOWN, NW 4 mi., at the Waldrop Copper Mine near the Polk Co. line—**Copper** minerals, **Pyrite**.

HART COUNTY

AREA, the old Water Hole Mine at Cross Roads—gem **Beryl**.

BOWERSVILLE, area schist outcrops—**Sillimanite**.

Georgia

HARTWELL: ① area mica mines—associated gem minerals; ② US 29 E to access rd. to Hartwell Dam, a quarry on right—gem **Beryl**, **Garnet**, **Microcline**, **moonstone**; ③ SW 6 mi., at headwaters of Coldwater Cr., as crystals in biotite gneiss—**Sillimanite**.

HENRY COUNTY

McDONOUGH, N 6 mi. (5 mi. S 25° E of Stockbridge), just N of the Stockbridge-Millers Mill rd. and 1 mi. W of Millers Mill, a pegmatite mine—**Muscovite**, pegmatite **gems**, **minerals**, etc.

IRWIN COUNTY

AREA, regional farm field exposures of Miocene rocks, especially around Osierfield—gemmy **tektites**.

JACKSON COUNTY

COMMERCE: ① area: (a) hard-rock exposures—green **Epidote**; (b) Double Top Mt.; and (c) Sugar Loaf Mt., area—**Rhodolite** garnet; ② on the J.T. Cheatham farm—gem **Beryl**; ③ NE on Rte. 59 and 5 mi. E of Co. line—gem **Beryl**.

JEFFERSON, E 5 mi. on the Brockton rd., pegmatites: ① near the Harris School—gem **Beryl**, **Smoky Quartz**; ② the Venable farm across rd. from the school; ③ N of the school, at the Potts farm; ④ E of the school, the Webb farm—gem **Beryl**, **Mica**, **Quartz** crystals, etc.

NICHOLSON: ① several area pegmatite exposures—gem **Beryl**; ② W side of US 441: (a) toward Commerce, in pegmatite exposure; (b) a dirt side rd. just N of town—gem **Aquamarine**.

JASPER COUNTY

AREA, all plowed fields throughout Co.—**Beryl**, **Quartz**, (blue, smoky).

HILLSBORO: ① area rd. cuts (well known to gem collectors) —**Amethyst**, **Quartz** crystals (blue, asteriated, rose, smoky, clear), **Mica**, **Vermiculite**; ② E 3 mi. on unpaved rd., the Barron Fullerton Hospital, area—**Amethyst**, **Quartz** crystals (all kinds); ③ from Baptist Church N on Hwy. 11 to dirt rd. 3 mi. to Barron Fullerton farm, near farmhouse—blue **Quartz**.

KELLY, NE 1½ mi., in kaolinized pegmatite, in mica schist—**Mica**.

MONTICELLO: ① S along Rte. 83, area plowed fields—**gem crystals**; ② fields along rd. to Hillsboro—**Beryl**, **Quartz** crystals (blue, smoky); ③ in dumps of 13 area mines—**Amazonite**, **Garnet**, **Mica**.

JONES COUNTY

ROUND OAK, area—**agate**, **jasper**, **petrified wood**.

LAMAR COUNTY

AREA, old mines and prospects—**Mica**, **Feldspar** crystals, white **Quartz**.

BARNSVILLE: ① an old mica mine—blue **Beryl** crystals, **mica**; ② SE 5 mi., in area soils—**Apatite**, **Garnet**, **Mica**, **Quartz**; ③ E 7 mi. and 0.8 mi. N of the Forsyth (Monroe

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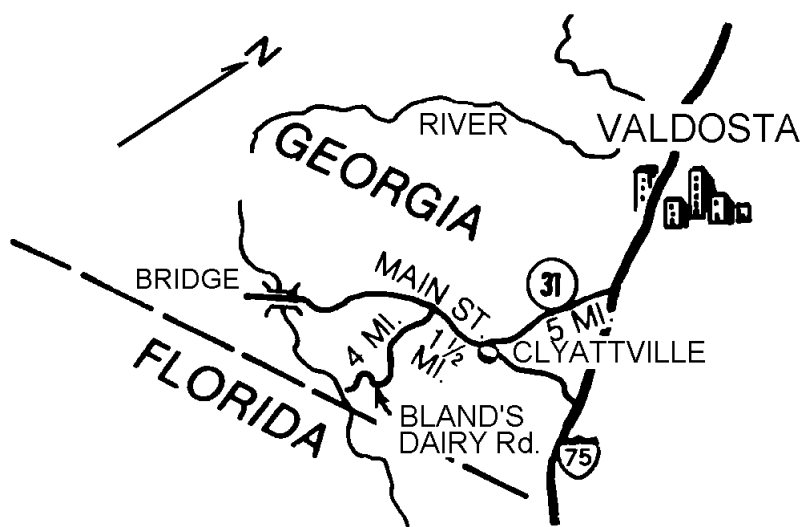
Co.) hwy., an old mine shaft in a pegmatite—**Mica**; ④ S 80° E 7 mi. and 1½ mi. due S of the Forsyth hwy. at the point where it crosses the Co. line—**Mica**, white **Quartz**, **Feldspar**.

MILNER: ① 1 mi. W of the Barnsville-Griffin (Spalding Co.) hwy., and ② ¾ mi. SW of the Lighthouse, pegmatites—**Mica** books, **Quartz** (milky, smoky).

RAMAH CHURCH, W ½ mi., near the Early-Vaughn Mine, pegmatite outcrop—**Aquamarine**, **Golden Beryl**, **mica**, **Quartz**, **Feldspar**.

LINCOLN COUNTY

LINCOLNTON, W 6 mi. on Rte. 378 to Graves Mt.: ① on N side, a mine of the Aluminum Silicates Corp. (fee) —**Lazulite** crystals, gem **Rutile** (deep red), **Pyrophyllite** crystals (fluorescent); ② Paschal and Phelps mines, abundant specimens—**Galena**; ③ base of mt. at picnic ground 1 mi. E of Washington Co. line, take footpath to saddle and top of mt., area—**gem** crystals.



LOWNDES COUNTY

CLYATTVILLE, leave Int. 75 at Valdosta exit, turn W on Hwy. 31 for 5 mi. to Clayattville, take Main St. W 1½ mi., then S on Bland's Dairy rd. 4 mi. to the Withlacooche R, collect at low water stages—**agatized coral**.

LUMPKIN COUNTY

AREA, stream gravels, from placers—**Gold**.

AURARIA: ① S 2 mi., stream gravels of Baggs Branch, placers—**Gold**; ② W, at: (a) Battle Branch Mine—**Galena**, native **Gold**; (b) McKlusky Cr., the Topabri Mine close to the Etowah R.—**Gold**, **Pyrite**.

DAHLONEGA (gold mining center): ① many area mines—**Gold**; ② area placers claims (fee) —**Gold**, **gem stones**; ③ E, the Lockhart Mine on Yahoola Cr.—**Garnet**, **Gold**; ④ S 3 mi., Turkey Hill, many area mines and prospects—**Garnet**, **Gold**, **Ruby**, **Staurolite**, **Tourmaline**, **Zircon**; ⑤ SE, at jct. of Long Branch with the Chestatee R., the Long Branch Mine—**Gold**; ⑥ SE, in bottom of the Barlow Cut, the Barlow Mine (largest of the old saprolite working in the dist.)—**Gold sulfides**; ⑦ NE several mi., the McDonald Mine—**Gold**, **Pyrite**; ⑧ NE 9½ mi., the William Mica Mine (2½ mi. SW of Ward Gap) —colorless **Topaz**.

PORTER SPRINGS, SE 1 mi., exposure—**Corundum**.

Georgia

LUMPKIN, UNION, FANNIN & TOWNS COUNTIES

Many **Mica** mines occur in these counties, primarily along the Blue Ridge crest near the Lumpkin-Union Co. line. The mining section extends into the N part of Union Co. and the S and E portions of Fannin Co. A total area of about 400 sq. mi. is involved, and nearly all mines (which are locatable on topographic maps) can easily be reached by automobile.

MADISON COUNTY

AREA, see Elberton in Elbert Co. Numerous scattered mines containing **gems** and **minerals** described.

McDUFFIE COUNTY

THOMSOM: ① area old mines, such as Columbia Park, Hamilton, Seminole, McGruber and others; and ② NW 12 mi., adjacent to the Little R., a Quartz mine—**Gold**.

MERIWEATHER COUNTY

FEDERAL SCHOOL, SW $\frac{3}{4}$ mi., the Bozeman Mica Mine—**Beryl** crystals, **Mica**.

GREENVILLE, N 40° W 6 mi. (12 mi. SE of Hogansville in Troup Co.), mines—**Muscovite**.

MASSINGALE, $\frac{1}{2}$ mi. distant at the Ernest Stozier farm, off Hwy. 109 to the first millpond, then first rd. left of millpond to fourth house on left, in pegmatite (fee)—**Aquamarine, Beryl, Garnet, Tourmaline**.

WARM SPRINGS: ① 1 mi. out of town along RR, area—**agate, chert, jasper**, common **opal**; ② 15 mi. W at Pine Mountain Valley—**Rose Quartz, Beryl**.

WOODBURY, W 5 mi. and 3 to 4 mi. due W of Cane Cr. Church—**Muscovite**.

MONROE COUNTY

CULLODEN: ① area mines and prospects, numerous—**Mica**; ② N 4 air mi. and 1 mi. S of Monroe-Lamar Co. line, pegmatite site of extensive mica mining in large open cut, with many other area cuts and old pits—**Muscovite, Biotite, Feldspar, Quartz**; ③ N 4½ air mi., near Co. line, pegmatite—**Feldspar, mica, Quartz** (milky, smoky).

FORSYTH: ① area mines and prospects, and ② S 47° W 7¼ air mi. (9 mi. by rd.) and 3 mi. SW of Brent, the Peters Mine—**Biotite, Muscovite, Feldspar, Rose Quartz**.

JULIETTE, many area mines and prospects—**Feldspar, Mica, Quartz** (milky, smoky).

MORGAN COUNTY

APALACHEE, W, near Adair Plantation, outcrop—**Aquamarine**.

BETHANY (Church), SE 1 mi., the Denson Mica Mines near Rock Cr.—gem **Beryl, Muscovite**.

BUCKHEAD: ① area farm of Benny Ray, in cavities in massive quartz vein—Amethyst; ② E 2 mi., area exposure—**Amethyst, Quartz** crystal.

MADISON: ① NE 1½ mi., mine—**Mica**; ② area toward Rutledge: (a) Hard Labor Cr., in drainage area and tributary creeks—**Corundum, Rutile, pink Sapphire, Spinel**;

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(b) 1.6 mi. SW of Talking Rock, in mica prospect—**Beryl**; (c) gravels of confluence of Little R. and Shoal Cr.—**Corundum**.

RUTLEDGE, take dirt rd. from Hwy. 12 for 2 mi. SW of the Georgia RR, on the Bill Oxford farm—**Corundum**.

MURRARIY COUNTY

AREA, stream beds and banks, fields, rd. cuts, etc.—Quartz **gemstones**.

CHATSWORTH, 3 mi. distant at Fort and Cahutta Mts., deposits—**Talc**.

ETON, area mines—**Barite, talc**.

HOOKE SCHOOL, N on dirt rd. to Fincher Bluff—**silicified oolite**.

SPRINGPLACE, area rd. cuts along Rte. 225 to the S—**agate, chalcedony, silicified oolite**.

MUSCOGEE COUTNY

AREA, gravels along the Chattahoochee R. and its tributaries—**chalcedony, chert, flint, jasper, common opal, opalized wood**, etc.

COLUMBUS: ① E 10 mi., via Rte. 103 to Randall Cr., turn right on dirt rd. to a sandpit—Quartz **gemstones**; ② near Bull and Randall creeks—**petrified wood**.

PAULDING COUNTY

AREA, 5.2 mi. E of the New Georgia Church, several granite pegmatite outcrops—pink **Feldspar, Mica**.

DALLAS: ① from W of Rte. 92 just NE of town, an area of many corundum mines extending S to Brownsville—**Corundum** (blue, gray, lavender, deep red); ② SE 6 mi., loose in soil, near Little Bob Copper Mine—**Almandite** garnets; ③ SW to within 2½ mi. of the Carroll Co. line and 3½ mi. SE of Rose's Store (old Embry), near headwaters of the Turkey Cr., area of active mining around 1914, many old mines—**Corundum, Mica**; ④ N on Rte. 61 (halfway to Cartersville in Barstow Co.), at Burt Hickory Ridge, placers—**Gold**.

HIRAM: ① the Little Bob Copper Mine—**Almandite** garnet, **Azurite, Limonite, Malachite, Pyrite**; ② at nearby Garnet Hill, area—gem **Garnets**. PICKENS COUNTY

AREA, Sharptop Mt., exposures—**Kyanite**.

PICKENS COUNTY

AREA, Sharptop Mt., exposures—**Kyanite**.

JASPER, S 2½ mi. to Harmony School and halfway to Refuge Church—**Kyanite**.

TATE: ① area quarries in the Tate-Marble Hill dist.—**Almandite** garnet, **Kyanite, Mica, Staurolite**; ② immediately S, at jct. of Rte. 5 and 143, a nearby outcrop—**Beryl, Feldspar, Rutile, Smoky Quartz**; ③ SW 1 mi., the Holly Springs Quarry, in area forest—**Apatite, Magnetite, green talc, Verde antique**; ④ E 2 mi., as boulders of massively in mica schist—**Kyanite**; ⑤ E 2½ mi., residual boulders—**Kyanite**; ⑥ W 4 mi.: (a) SE of Rock Creek on the Ralph Cook farm near Refuge Church, outcrop—**Golden Beryl, Aquamarine**; (a) the Cook farm, outcrop—**Beryl**; (b) the Denson Mine—**Aquamarine, Mica**; ⑦ SE 2 mi. as buttonlike lenses—**Kyanite**.

Georgia

POLK COUNTY

AREA, including much of Date, Walker, Chattooga, and Catoosa counties for a distance of approximately 175 mi., as unusually rich deposit and outcrops, especially in the Red Mt., formation series—**Limonite, fossil iron ore.**

CEDARTOWN, area iron mines—**Rhodochrosite.**

RABUN COUNTY

AREA: ① many regional old mines—**Gold, Quartz** crystal, **Beryl**, etc.; ② extreme NE part of Co., the Laurel Creek Mine—**Corundum** (major source of corundum).

CLAYTON: ① many area old mines—**Mica, Beryl, Quartz**; ② SE 4 mi.: (a) area of the Germany Mt.; (b) at Wilson farm—**Amethyst** (gem quality); ③ E 7 mi. and S of War Woman Dell, the Becky Beryl Mine—**Beryl** (as large flawed crystals in pegmatite, with clear portions suitable for cutting); ④ SW: (a) 7½ mi. old mica mine on Dicks Cr. rd.; (b) 8 mi. Mark Beck farm via Warwoman and Dick's Creek rds.—**Beryl, Mica**; ⑤ on the dump of the North Georgia Co. Mine, 4 mi. N; ⑥ W.T. Smith Mine at jct. of rd. E from town with Hwy. 28—**Amethyst.**

RABUN GAP: ① the Kell Mica Mine—asteriated **Quartz** crystals; ② N 1 mi., along Black Cr.—gem **Amethyst.**

TALLULA FALLS, area creeks—**Citrine, Quartz** crystals (clear, smoky).

ROCKDALE COUNTY

MAGNET, NW 2 mi. and 1 mi. N of the South Ocmulgee R., in a pegmatite—weathered **Sulfides, Muscovite, Feldspar, milky Quartz.**

SCREVEN COUNTY

SYLVANIA, Hwy. 301 N almost to Savannah R., turn left for 8 mi. to a sharp turn, take dirt rd. there ½ mile, along road—**fossil agate.**

SPALDING COUNTY

GRIFFIN, SW 2½ mi., rock outcrops—gem **Beryl, Quartz** crystals, **Tourmaline.**

VAUGHN, N 2 mi. and slightly W: ① in fields of the J.T. Allen farm—gem **Beryl, Rose Quartz, black Tourmaline**; ② along both sides of the rd.—gem **Beryl, Rose Quartz, black Tourmaline.**

STEPHENS COUNTY

TACCOA, S 9 mi.—**Quartz** crystals.

TOWNS COUNTY

AREA: ① extending into Clay Co., NC, a region of mica schist exposures reaching from (a) Winchester Cr. valley, along rd. as loose crystals—**Sillimanite**, blue-bladed **Kyanite**; (b) across Hunter Knob, NE side, a 100' zone—**Graphite, Muscovite, Quartz** crystals, **Sillimanite**; (c) through the Brasstown Church section (church yard and area rd. cuts to NE, numerous zones) —**Sillimanite**, associated with **Kyanite, Biotite** and **Muscovite**; (d) along Brasstown Cr., extending to Brasstown Bald, in pegmatite outcrop—**Corundum, Sillimanite**; (e) along an abandoned hwy. to SW of Brasstown Cr.,

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zone of schist 30' to 35' thick—**Sillimanite**, **Sericite** (as alteration mineral). This mineralization zone extends to Tusquitee in Clay Co., NC. ② Regional stream beds, banks, adjoining fields and hillsides—gem **Amethyst**; ③ many regional old mines and prospects along the Appalachian Trail—**Corundum**, **Sillimanite**.

HIAWASSEE: ① at Charlie's Cr., in banks and gravels—gem **Amethyst**; ② area of Hog Cr., disseminated in minute crystals—**Chromite** in **Chrysolite**; ③ SW 2 mi., the Hog Creek Mine—gem **Rubies**, **Smaragdite**; ④ W for several mi., as linings in rock cavities of exposures—**Rhodochrosite**; ⑤ Lake Chatuge (reached via Hwy. 76 or side rds. E of Rte. 69): (a) beach gravel—**Corundum**, **Garnet**, **Kyanite**, **Quartz** crystals, **Rutile**; (b) Elf, area around Mt. Pleasant Baptist Church—**Corundum**.

YOUNG, on S side of Track Rock Gap reached by rd. S from US 76, 2½ mi. W of town—**Corundum**.

TROUP COUNTY

LA GRANGE: ① area: (a) pegmatite outcrops near La Grange Airport—**Aquamarine**, **Beryl** (blue, opaque), **Quartz** (milky, rose), black **Tourmaline**; (b) along the Young's Mill rd., a pegmatite exposure—**Beryl**, **Quartz** crystals; (c) N along US 27 a short distance, on both sides of rd.—gem **Beryl**; ② N 1 mi. from town square, prospects in pegmatite—green **Muscovite**, **Garnets**, **Smoky Quartz** (crystals, nodules); ③ S on Rte. 219 to Cleveland Crossroads, the famed Big Beryl Mine (formerly the Hog Mine—fee)—**Amethyst**, **Aquamarine**, **Beryl** (crystals of more than 60 lbs.), **Garnet**, **mica**, **Quartz** (rose, rutilated), black **Tourmaline**, etc.; ④ S 8 mi. to Smith's Store: (a) S 100 yds. on W side of Rte. 219, the Stevens place, a pegmatite outcrop—gem **Beryl**; (b) W 0.6 mi., on N side of dirt rd. to Grady Hill School, a peculiar pegmatite outcrop—**Feldspar**, **Biotite**, **Muscovite**, **Quartz** (rose, smoky), **Tourmaline**; (c) S 1 mi. from Smith's Store and Hardins Crossroads, on W side of Rte. 219, in a pegmatite—**Aquamarine**, **Beryl**, green **Muscovite**, **Quartz** (rose, smoky), black **Tourmaline**; ⑤ SW 10 mi. on the Gabbetville rd., pit on the Hugh Allen place—gem **Beryl**, **Quartz** (rose, milky).

LOUISE, just N of the Calloway Airport, the Chromite prospect—**Beryl**, **Chromite**.

UNION COUNTY

AREA: ① Gumlog Mt., area schist exposures—**Corundum**, **Kyanite** (crystals, clusters), black **Tourmaline**; ② 2 mi. S of Hightower Bald, between Jacks Branch and Shoal Branch—**Amethyst**, **Quartz** crystals.

BLAIRSVILLE: ① S 4 to 5 mi., area—**Gold**, **Sillimanite**; ② S of Hwy. 76 W, especially ½ mi. E of Akin Mt. and 5 mi. NW in Teece Cr. valley, 1 mi. below hwy. Crossing—**Gold**, **Kyanite** (crystals to 2" long); ③ on S side of Track Rock Gap—**Ruby**.

UPSON COUNTY

CREST: ① area, gravels of Hurricane Cr.—**Beryl**, **Kyanite**, **Quartz** crystals; ② N 1 mi., on W side of Town Mt.—**Garnet**, **Feldspar**, **Kyanite**, **Quartz**; ③ SW 2 mi., pegmatite prospects—**Mica** books to 3" dia.; ④ Mica Hill—**Biotite**, **Muscovite**.

THOMASTON: ① area, a broad region of rich mines extending from SW of Thomaston S of the Thomaston-Yatesville line to E and N of Yatesville almost as far N as Topeka Jct., more than 50 mines—**Kyanite**, **Mica**, and associated **gem minerals**: (a) area mica mines—**Citrine**, **Corundum**, **Garnet**; (b) Goat Rock, rd. cuts along Rte. 19—**gem** crystals; ② SW 3½ mi., on the Dolly Cherry place—gem **Kyanite**, **Staurolites** (finest twinned crystals in GA); ③ E 4 mi. and about 1 mi. off the Thomaston-Butler Hwy., the Mauldin Mine (well known locally) —**Albite**, glassy **Microcline**, **Apatite**, **Biotite**,

Georgia

Muscovite, Smoky Quartz; ④ NE 6 mi., near jct. of Thomaston-Yatesville hwy., in banks and cliffs of Wilmot's Ravine—gem **agate, jasper**; ⑤ S 20° W 3½ mi. by air (4½ by rd.) and ½ mi. due E of Bell Cr., the old Bell Mine in a pegmatite—**Microcline, Muscovite, Quartz** (milky, smoky); ⑥ S 5 mi. and 1 mi. W of the Thomaston-Butler hwy., on the Parker Ferry rd., pegmatite—**Feldspar, Mica, Smoky Quartz** nodules; ⑦ S 50° W 5½ mi. and 1 mi. N 35° W of jct. of Patato and Womble creeks and between the two, a pegmatite mine—**Mica**; ⑧ SE 7½ mi., the Mitchell Creek Mine—**Apatite, Muscovite**; ⑨ NE 7 mi. at the Kelly place—**Corundum**.

YATESVILLE: ① Just outside of town, the Herron Mine—**Apatite, Beryl** (crystals to 7" long), **mica, Quartz**; ② N 3 mi. by unimproved rd. that lies 0.8 mi. E of paved rd. to Barnesville, the Adams Mine—gem **Beryl**; ③ S 46° W 3.8 mi., the Charlie Nims Mine, pegmatite, on dump—**Mica** books.

WALTON COUNTY

BLASINGAME, 6 mi. out on dirt rd. to the Malcom farm, a pegmatite exposure in a field—gem **Aquamarine, Beryl, Mica, Quartz, Tourmaline**.

WASHINGTON COUNTY

SANDERSVILLE, S 4 mi. on Rte. 15 and 2 mi. from Buddy's Service Sta., at the Hugh Taubutton farm—**chalcedony, jasper, agate**, etc.

WHITE COUNTY

AREA, widespread stream gravels, placers—**Gold, Diamonds, Topaz, Rubies, Aquamarines**.

CLEVELAND: ① numerous Gold mining area (including Helen) —**Gold, gem** crystals; ② N 4 mi., at the Dunbar Mine, placers—**Gold**.

NACOOCHEE: ① area mines—**asbestos**; ② placer gravels of Bean Cr.—**Gold**; ③ 3 mi. and just W of the Cleveland-Helen hwy., placers—**Gold** (nuggets); ④ the Horshaw Mine—**Gold, Diamond**; ⑤ in cut on N side of Hwy. 17, 3 mi. E—green **Apatite**.

WHITFIELD COUNTY

DALTON, cut banks and gravels along Tarr Cr.—red oolitic **jasper**, black **siliceous oolite**.

WILKES COUNTY

ADASBURG, area outcrops—**Quartz** crystal.

WASHINGTON: ① SE 7 mi., on the Wingfield plantation on the Wrightboro rd., extensive outcrop of quartzite—**Kyanite** crystals; ② E on US 378 to Co. line, turn onto first right-fork rd., then take a left fork to crest of hill, the Magruder Mica Mine—**Azurite, Bornite, Chalcopyrite, Galena, Gold, Malachite, Pyrite, Garnet, gem green Spinel**.

WILKINSON COUNTY

GORDON, gravels along nearby lake shore—**opalite, jasper, chalcedony, agate**.

McINTYRE, area mines—**Bauxite**.

HAWAII

Of the twelve Hawaiian Islands which lie approximately 2,000 miles west of California, four are mere barren rocks, and four are large, extremely mountainous islands culminating in Mauna Kea (13,900') and Mauna Loa (13,700'). Four other islands are of lesser extent, but all are composed of basalt.

Almost the only minerals present on any of the islands are sands, some gravel, and limestone, including deposits of calcareous algae and the skeletons of stony corals. In the craters of the still active volcanic cones one can find **sulfur**.

LANAI

MANELE BAY, on SE shore, in cinder cone—**sunstone**.

HAWAII

HALEMAUMAU, on Kilauea, droplets known as *Pele's Tears*—**obsidian**.

PUNA Dist.: ① in lava flow; and ② in green beach sands of Oahu and South Point—**Olivine**.

OAHU

KAILUA: ① on N shore in basalt ridges, in ravines from Mount Olokanu, in washes of Keolu hills and in H & D quarry—**Quartz** crystals, **jasper**; ② in Lanikai golf course washes—**jasper**; ③ in Wahiawa Valley—**jasper**.

KANEOHEE, on N shore, ridges in Koolau Range—**jasper**.

OLOMANA PEAK, in gullies, and also in crater of West Molokai volcano—**banded agate**.

WAIANAI RANGE

POHAKEA PASS—clear yellow **Labradorite**.

IDAHO

With an oddly configured *Panhandle* shape, Idaho reveals a varied topography. The central and northern portions are extremely rugged, encompassing the massive Sawtooth and Salmon River mountain systems, with many lakes, and snow-laden peaks that rise more than 12,000' high. The mountains have been extensively prospected and mined for **Copper, Gold, Lead, Silver and Zinc**. As a Gold producing state, Idaho ranks 9th in America. Many abandoned mining ghost towns dot the mineralized areas.

The mountainous nature of Idaho led early prospectors from Virginia City, NV, and Bannock, MT into its labyrinthine watersheds in search of Gold and Silver. Idaho's mountain systems are the result of enormous batholithic intrusions that took place during the Laramide revolution some 70 million years ago. Known to geologists as the Idaho Batholith, this granite mass covers from 16,000 to 20,000 square miles and is probably the largest and best-known such geological phenomenon in America.

The earliest known Gold discovery in Idaho was an auriferous sandbar along the Pend Oreille River in 1852. Then in 1860 Captain E.D. Pierce found Gold near what became the town of Pierce in Clearwater Co., with other rich placers soon being mined at Elk City, Orofino, Boise Basin, Florence and Warren. Although many of the richer placers were exhausted by 1870, the following half-century led to intensive exploration for lode Gold deposits. Most of the state's Gold came from lode mines after 1900.

In addition to the basic and noble metals, produced in astonishing abundance, Idaho provided large amounts of strategic minerals of inestimable value to the emergencies of World War I and II. Potentially, at least, the Panhandle State ranks above all others in America in the importance of its mineral resources. Aside from the commercially valuable minerals, the state provides an unusual abundance and variety of gemstones, gem crystals, silicified woods, and other mineral items highly valued by collectors occurring throughout the state in many more localities than enumerated here.

ADA COUNTY

AREA: ① very many localities along Co. roads, prospect almost anywhere—**agate, chalcedony, jasper, petrified and opalized wood**; ② gravels of Musselshell Cr. tributary of the Snake R.—**Zircon**.

ADAMS COUNTY

AREA: ① very many regional old mines and dumps—**Azurite**, native **Copper, Gold, Malachite**, etc.; ② Sturgill Cr., area deposits, prospect pits, and mines—**Manganese**; ③ Rock Flat gravels—**Diamond, Garnet, Ruby, Sapphire, Topaz**.

COUNCIL, SE 10 mi., the Mica Queen Mine in Sec. 8, T. 15 N, R. 2 E —**Muscovite**.

CUPRUM, in limestone in contact zone where copper is mined in the Seven Devils dist.—**Andradite** garnet, **Epidote**.

MESA, in all area deposits of volcanic ash—**opalized wood**.

NEW MEADOWS: ① E 5 mi. along Little Goose Cr. Canyon, in gravels—**Diamond**; ② Hwy. 55, 7 mi. E, dirt rd. left, and pan or screen sands of stream at Rock Flat, for stones—**Ruby, Garnet**; ③ a few mi. S in foothills—**Rhodonite**.

BANNOCK COUNTY

LAVA HOT SPRINGS, numerous area mines—**Manganese minerals**.

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POCATELLO, the Moonlight Mine (inquire)—**Bornite, Chalcocite.**

BEAR LAKE COUNTY

CLEVELAND, SE 1 mi., on E side of Bear R.—nodules mixed **Psilomelane** and **Pyrolusite**, wad.

MONTPELIER: ① E 3 mi., in limestone fissures—**Gypsum**; ② area of Paris Canyon, the Hummingbird Mine—**Quartz** (impregnated with **Cuprite** and **Malachite**).

BENEWAH COUNTY

FERNWOOD: ① SE 5 mi., Emerald Cr. and its East Fork—**Almandite garnet**; ② S 2 mi., gravels of Ruby Gulch—**Almandite garnet**. Some of the garnet from this location is *Star Garnet*.

BLAINE COUNTY

AREA, basalt exposures throughout Co., especially in the Pole Cr. area—**chalcedony geodes** (with **Amethyst** linings), **Quartz crystal geodes**.

BELLEVUE: ① SW corner of Co., in Wood River Dist: (a) Wood R. and tributaries in T. 1 S, R. 17 & 18 E, placers—**Gold**; (b) area mines—**Galena, Dufrenoyite, Magnetite, Malachite, Marcasite**; (c) Camas Croesus, and Tip Top mines—**Pyrrhotite**.

CAREY, gravels of the Little Wood R.—**agate, chalcedony, jasper**.

HAILEY: ① SW, in T. 1 N, R. 17 E and S of Croy Cr.—**Galena, Gold, Monzonite, Sphalerite, Uraninite**; ② W, in T. 2 N, R. 17 E, the Deer Cr. deposits—**Barite**; ③ area mines and dumps—**Galena, Silver, Sphalerite**.

KETCHUM: ① area Lead mines in T. 4 N, R. 17, 18 & 19 E—argentiferous **Tetrahedrite, Arsenopyrite, Galena, Siderite, Sphalerite**; ② the Sawtooth Dist., area mines—**Proustite** with **Pyrargyrite**.

BOISE COUNTY

AREA: ① the Banner Silver veins—**Gold, Pyrargyrite, Silver**; ② Deadwood Gulch—**Garnets, Gold**; ③ Willow Creek Dist., at (a) Checkmate, (b) Gold Hill, and (c) many other regional mines—**Gold, Pyrite, Silver**, etc. This Co. has many old mines; the dumps yield **Quartz crystals**, brilliant **Pyrite**, etc. in addition to other minerals.

BANKS, SE 11 mi., the Vaught prospect in Sec. 19, T. 8 N, R. 5 E—**Columbite, Mica**.

CENTERVILLE: ① N to Garden Valley, pegmatite outcrops—**Aquamarine**; ② along Grimes Cr. on way toward Placerville; and (c) along Boise R. near Twin Springs, are placers—**Gold**.

IDAHO CITY, in placer tailing and mine dumps, especially at Gold Hill mine—**Quartz, Garnet**.

PIONEERVILLE: ① the Quartzburg area, and ② around Grimes pass, lode deposits—**Gold**.

BONNER COUNTY

CLARK FORK (Dist.): ① area old mines—**Copper minerals**; ② mines in T. 55 & 56 N, R. 2 E—**Lead-Silver minerals**.

Idaho

BOUNDARY COUNTY

CARRIETOWN: ① along Little Smoky Cr., in T. 2 & 3 N, R. 14 & 15 E, placers—**Gold**; ② mines in T. 4 & 5 N, R. 13 & 14 E, lode—**Gold**.

PORTHILL, SW 26 mi., in T. 64 N, R. 4 W—**Gold, Lead, Silver**.

BUTTE COUNTY

ARCO: ① W 20 mi., in the Lava Cr. district—**Manganese** minerals, **Tourmaline**; ② in Antelope Cr. and Road Cr. areas and Upper Lost R. valley—**geodes** (Quartz or Amethyst filled); ③ in veins in Wildhorse Canyon on E side of Hyndman Peak—**Quartz**.

MOORE, follow Antelope Cr. canyon rd. 13½ mi. W, then drive or walk trail left to Big Piney Mt.—black **agate**.

CANYON COUNTY

MARSING, from rd. toward Homedale turn left at abandoned T Inn to Graveyard Point, then left on canal rd. over bridge and 2 mi., crossing canal bridge and backtracking ¾ mi.—gem **Opal**.

CARIBOU COUNTY

SODA SPRINGS, S a few mi.: ① Sec. 2, 11, 13 & 14, T. 9 S, R. 42 E, and ② Sec. 14, T. 10 S, R. 43 E, regional deposit—**Gypsum, Sulfur**.

CASSIA COUNTY

BURLEY, mines along Snake R.: ① T. 9 & 10 S, R. 24 & 25 E, placers—**Gold**; ② T. 15 & 16 S, R. 21 E, mines and dumps—**Copper, Gold, Lead-Silver**.

MOULTON, NW 5 mi. and just W of Almo—**Topaz**.

CLARK COUNTY

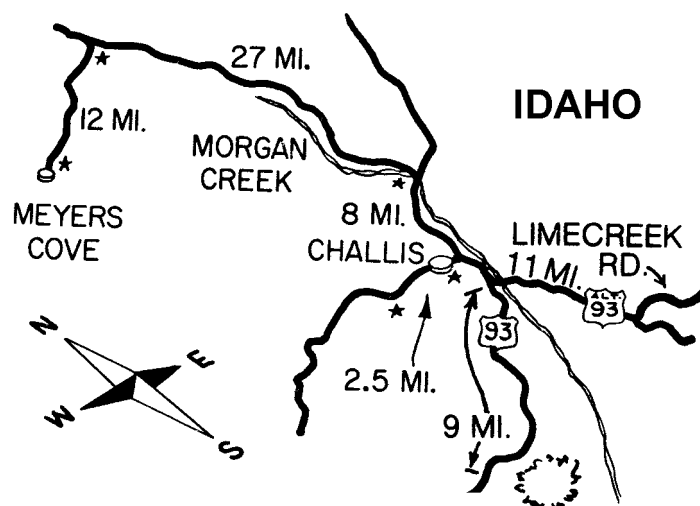
SPENCER, in Spencer Opal mine (fee) —**Fire Opal**.

CLEARWATER COUNTY

AREA: Kelly and Morse creeks in T. 39 N, R. 10 & 11 E, placers—**Gold**; ② North Fork (of Clearwater R.) and its tributaries, T. 37, 38 & 39 N, R. 1, 2, 3 & 4 E, placers—**Gold**; ③ Rhodes Cr., gravels—**Zircon**.

PIERCE: ① area placer mines, and ② along Orofino Cr. between Orofino and Pierce, T. 36 & 37 N, R. 2, 3 & 4 E, placers—**Gold**; ③ N 11 mi., near Headquarters, area—asteriated **Almandite** garnet; ④ in placer tailings along Rhodes and Orofino creeks—**Sapphire, Epidote**.

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CUSTER COUNTY

AREA: ① Alto dist., near Wild Horse Cr., mines—**Scheelite**; ② Bay-horse, T. 12 & 13 N, R. 18 E, area mines—**Lead minerals**; ③ Bonanza and Custer mines on Yankee Fork, T. 12 & 13 N, R. 14 & 15 E, lodes—**Gold**; ④ Nicholia dist., rich early-day strikes—**Lead-Silver minerals**; ⑤ toward head of Big Lost R., as well as all other Tertiary basalts outcropping over a broad region—**chalcedony geodes (Amethyst linings)**.

CHALLIS: ① a $7\frac{1}{2}$ mi. long belt extending from the Pacific Mine near Bay-Horse on the S to Mill Cr. on the N, most deposits being in T. 13 N, R. 18 E—**Fluorite**; ② Hwy. 93 S to Hwy. 93A, then 8 mi. S on Hwy. 93 to bridge, stay on Hwy. 93 another $1\frac{1}{2}$ mi. to Malm Gulch, hike or take jeep trail $2\frac{1}{2}$ mi. E to petrified forest on ridge—**agate, petrified wood**; ③ : (a) S on Hwy. 93A through gorge, collect on hills and in valleys to right—**agate**; and (b) 2 mi. on rd. to left—**black wood**; ④ Hwy. 93 to Hwy. 93A, take 93A 11 mi. SE, then Lime Creek Rd. E 2 mi., in hills—**agate**; ⑤ N of town $\approx$ 8 mi. in turn-off at Morgan Creek almost due N 27 mi., then sharply left toward Meyers Cove, along rd.—**seam agate** in volcanic ash.

CLAYTON: ① area of Squaw and Thompson creeks in T. 11 & 12 N, R. 16 E, mines—**Scheelite**, lode **Gold**; ② mines in T. 11 & 12 N, R. 17 E—**Lead minerals**.

LOST RIVER, on the North Fork of Lost R.—**agate, jasper**.

MACKAY, area Copper mines and dumps—**Azurite, Chalcopyrite, Chrysocolla, Malachite, Pyrite, Pyrrhotite**.

STANLEY: ① area stream gravels of the Stanley Basin—**Corundum, Gold, Sapphire**; ② placer mines in T. 10 & 11 N, R. 12 & 13 E; and ③ along the Salmon R., particularly between Robinson Bar and Clayton in T. 11 N, R. 15, 16 & 17 E—**Gold**; ④ the Willis placers along Stanley Cr.—**Cinnabar, Gold**.

ELMORE COUNTY

AREA: ① along the Boise R.: (a) Middle Fork, in T. 6 N, R. 10 E; (b) South Fork, in T. 2 N, R. 10 E; (c) Twin Springs, in T. 3, 4 & 5 N, R. 5, 6 & 7 E, placers—**Gold**; ② the Neal dist., area mines—**Stibnite**.

MOUNTAIN HOME, NE 25 to 50 mi.: ① Pine mining dist., as stringers in granite—**Cinnabar, Gold**; ② Featherville and Rocky Bar, regional old mines—**Gold**; ③ Atlanta, famous old Gold camp: (a) T. 5 N, R. 11 & 12 E, mines—**Gold**; (b) W 20 mi., on East Fork of Sevenholm Cr., in Sec. 13, T. 6 N, R. 9 E, the Hermada deposit, high grade—**Stibnite**.

Idaho

(The original old mining camp of Pine now lies under the waters of the Anderson Ranch Reservoir.)

FREMONT COUNTY

ASHTON, in volcanic rocks to N and then E of US 191 in Island Park Caldera—**agate**.

ST. ANTHONY, N 18 mi. and 8 mi. SE of Ivan, at Crystal Butte, area—**andesine**.

GEM COUNTY

EMMETT: ① take rd. toward Horsehoe Bend and up Black Canyon about 1 mi. to old diggings in rock walls—precious **Opal** (containing red and green fire); ② 5 mi. E of Squaw Butte—**agate**.

PEARL, extending NE to Co. line and including parts of T. 6 & 7 N, R. 1 E, many old mines—**Gold**.

GOODING COUNTY

BLISS, in volcanic ash along Clover Cr.—**opalized wood**.

GOODING, area along both sides of Clover Cr. extending E into Lincoln Co. and embracing a considerable region—**opalized wood**.

IDAHO COUNTY

AREA: ① Bear Valley, a deposit in T. 12 & 13 N, R. 9 E—**Monazite, Uranium minerals**; ② Lolo, Musselshell and Eldorado creeks, many once rich placer mines—**Gold**; ③ Resort area placers—**Corundum, Gold, Zircon**; ④ Salmon R. sands and gravels, both sides and all tributaries—**agate, chalcedony, jasper, petrified wood**, etc.; ⑤ Slate and McKinsey creeks—**agate, chalcedony, jasper, petrified wood**, etc.; ⑥ T 33 N, R. 5 E, six or more ledges within a few square mi.—**Amphibole asbestos**. The western and southern halves of this large Co. are extensively mineralized and contain many old abandoned mine, and mining camps.

BURGDORF-WARREN (the entire region S of the Salmon R.): ① many area placers, especially in T. 22 N, R. 4, 5 & 6 E—**Gold, Monazite, Topaz**; ② in placer mining dumps at mouth of Grouse Cr. S of rd. to Warner; and ③ beyond Secesh Cr. at Ruby Meadows in placer mining dump—**Corundum, Quartz**.

DIXIE, N side of the Salmon R. along Sheep and Crooked creeks—**Gold**.

ELK CITY, region along side the American R. and the South Fork of the Clearwater R., many old mines and placers—**Gold**.

KOOSKIA: ① S, along the South Fork of the Clearwater R., including areas around Stites and Harpster, placers—**Gold**; ② E, along the Middle Fork of the Clearwater R., and on Maggic Cr., placers—**Gold**; ③ N on Hwy. 13, then NE to site—**petrified wood**.

LUCILLE-RIGGINS, regional placers along the Salmon R.—**Gold**.

OROGRANDE, SW, the Buffalo Hump mining dist., many mine dumps—**Copper minerals**.

RIGGINS, for several mi. to N in Little Salmon R.—**Garnet**.

ROOSEVELT, E 10 mi., the Pringle-Smith Mine at Sugar Cr.—**Cinnabar**.

WHITE BIRD, area gravels of the Wind and Salmon rivers, to 6 mi. N of town—**Gold**.

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IDAHO-LEWIS COUNTIES

AREA, the Lolo Dist., many mines—**Copper minerals**.

JEFFERSON COUNTY

CAMAS, in rhyolite near source of E branch of tributary to S fork of Camas Cr.—**Topaz, Fire Opal**.

KOOTENAI COUNTY

BAYVIEW, S and SW sides of Lake Pend Oreille, many mines and prospects—**argentiferous Galena**.

COEUR D'ALENE (Dist.), many area mines, (such as Bunker Hill and Sullivan at Kellogg)—**Gold, Lead, Silver**.

HAYDEN LAKE, area: ① T. 51 & 52 N, R. 1 & 2 W; and ② T. 48 & 49 N, R. 2 W, many mines—**Lead-Silver minerals**.

SETTERS, area land surfaces—**common opal** (yellow to brown).

LATAH COUNTY

AREA: ① NW part of Co., along Emerald and Ruby creeks—**Garnet**; ② the Hoodoo Dist., area mines—**Copper minerals**.

AVON: ① N 6 mi., on flanks and crest of Mica Mt. in Sec. 15, 22, 23 & 27, T. 41 N, R. 2 W, in pegmatite outcrops with numerous mines between Deary and Princeton, especially the Levi Anderson and Muscovite mines—green **Beryl, Biotite, Muscovite**; ② the Fitzgerald property and adjoining exposures in Sec. 27—**graphic granite**. The pegmatites found in a belt about 1 mi. wide extend for about 24 mi. in a NE to SW direction. There are many prospects and old workings along the outcrops.

DEARY, E on Hwy. 8 to Helmer, in Boulder Cr.—**Garnet**.

MOSCOW, W, toward Whelan and squarely on the boundary between ID and WA, in decomposed basalt exposures—precious **Opal**.

LEMHI COUNTY

AREA: ① Blue Wing dist., on W slope of the Lemhi Range in Sec. 23, T. 14 N, R. 23 E, the Ima Mine—**Tungsten (Huebnerite)** with **Tetrahedrite, Chalcopyrite, Galena, Scheelite, Sphalerite**; ② Parker Mt. dist., area—**agate, chalcedony**.

COBALT, the Panther Cr. valley 6 mi. below headwaters in porphyry dike extending 1½ mi. along Cr.—**Opal**.

GIBBONSVILLE: ① T. 25 N, R. 21 E; ② T. 26 N, R. 21 E, regional mines—**Autunite, Galena, Hematite, Gold, Pyrite, Torbernite**; ③ along the Salmon R. and area creeks, as placer sands—**Gold**; ④ back of the Salmon R., as lode mines—**Gold**.

GILMORE, T. 13 N, R. 26 E, lode mines—**Gold**.

LEADORE, T. 13 N, R. 27 E, area mines—**Lead minerals**.

LEESBURG, area placers—**Gold, petrified wood**.

MAY, on W side of Pahsemeroi valley in ledge of porphyry paralleling Panther Cr. and about 6 mi. from its source—**Fire Opal, opalite**.

MEYERS COVE, near Camas Cr. in T. 18 N, R. 17 E, 2 to 3 mi. NW, as vein fillings in composite lode-type veins in Challis volcanics and Miocene porphyries—**Barite, Fluorite, Quartz**.

Idaho

SALMON, SW 45 mi.: ① Blackbird Dist., on Blackbird and Meadow creeks in T. 20 & 21 N, R. 18 E, numerous mines and prospects—**Cobaltite**, **Chalcopyrite**, **Pyrite**, **Pyrrhotite**, minor **Lead-Silver-Zinc** ores; ② T. 20 & 21 N, R. 21, 22 & 23 E, many regional mines of considerable richness—**Azurite**, **Bornite**, **Chalcopyrite**, **Cuprite**, **Malachite**.

SHOUP, the Salmon R. and its tributaries in N part of Co. (near Gibbonsville), as placers and lode deposits in same region but extending farther S near Leesburg and Salmon—**Gold**.

LEWIS COUNTY

KAMIAH, SE 14 mi., exposure—**Amphibole asbestos**.

LEWIS, NEZ, PERCE, IDAHO, ADAMS, WASHINGTON COUNTIES

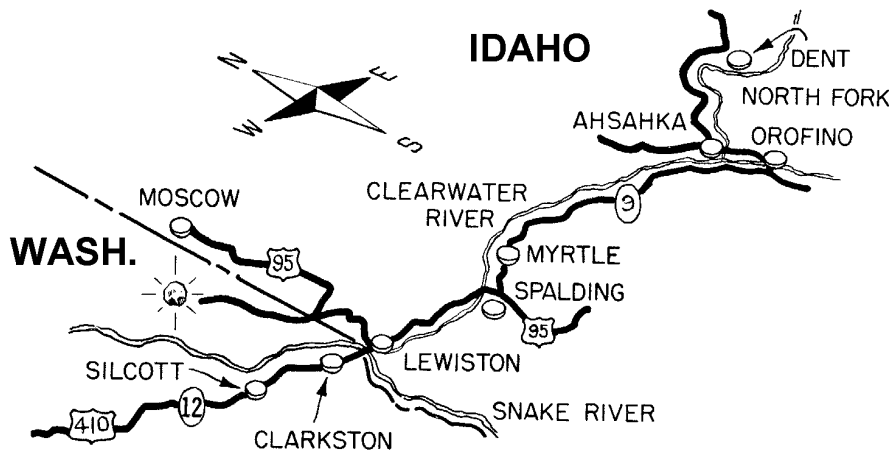
The Seven Devils mining dist., extending along the Snake R. for about 120 mi., known as the Snake River Copper Belt, very many mines and prospects—**Azurite**, **Bornite**, **Chalcocite**, **Chalcopyrite**, **Covellite**, **Malachite**, etc.

LINCOLN COUNTY

SHOSHONE, large surrounding area, especially W into Gooding Co.'s Clover Cr. region—**opalized wood**.

NEZ PERCE COUNTY

AGATHA, area E and N—**opal**, **opalized wood**.



LEWISTON: ① gravel bars all along the Clearwater R. between town and Dent—**agate**, **jasper**, (with Sillimanite inclusions), cherty *Clearwater Picture stone* (gray with black stripes); ② Clearwater R. gravels upstream from town for about 100 mi., but especially between Lewiston and Myrtle—**Fibrolite** (gem Sillimanite); ③ all regional streams—**agate**, **Aquamarine**, **Garnet**, **Gold**, **Quartz** crystals; ④ 8 mi. down the Snake R. on N side, on weathered basaltic hillsides—**Fire Opal** (in black matrix); ⑤ 11 mi. downstream to gravel pits at Silcott, take steep hill trail to caves near top, in basalt—fine gem **Fire Opal**.

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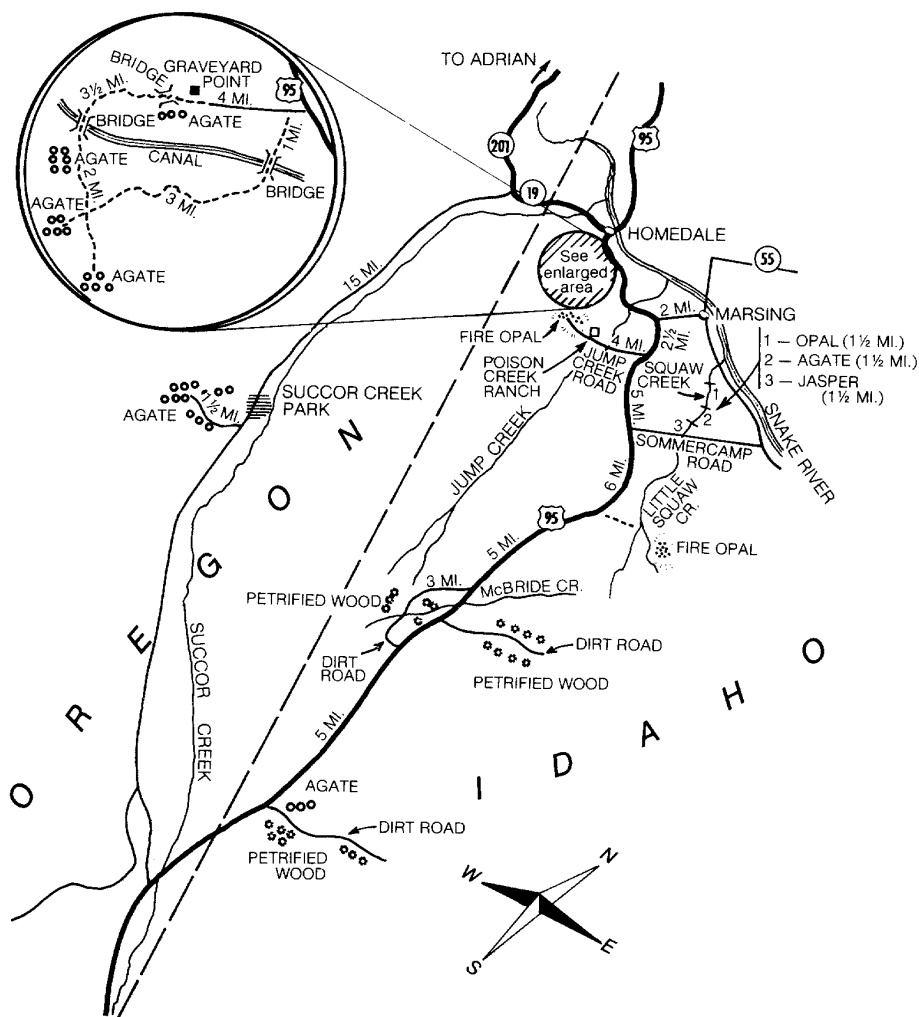
OWYHEE COUNTY

BRUNEAU: ① entire region of the Bruneau Desert, along almost any access rd.—**agate, chalcedony, jasper**; ② SE, in the Bruneau Canyon area—*Bruneau Canyon jasper*; ③ SE 8 mi. to Indian Hot Springs, then S past ranch 8½ mi., at Indian Bathtub—purple **agate**.

CLIFFS (40 mi. S of Jordan Valley, OR), the Brace Brothers ranch—precious **Opal**.

ENTERPRISE, W 3 mi. and 2 mi. SW of Sommer Camp, in open cuts and pits in perlite rhyolite—**Opal**.

GRAND VIEW, along the Snake R., area placers—**Gold**.



HOMEDALE, S 2 mi. on US 95 to Graveyard Point marker, then 4 mi. W and 1 mi. S to area of ID - OR boundary. A very rich gem **agate** area lying mainly on the OR side (see map above).

NAMPA: ① area of Graveyard Point, SE—plume **agate**; ② SW 8 mi., at Squaw Cr. Canyon, just below jct. of Squaw and Little Squaw creeks and 3 mi. back of the Snake R., in basalt gas cavities—**chalcedony, Opal, onyx**; ③ W, along Sucker Cr.—**plume agate**.

OREANA: ① area old mines—**Lead-Silver minerals**; ② SE 6 mi., along Castle Cr.—precious **Opal**.

Idaho

SILVER CITY: ① Black Jack and Trade Dollar mines in town—**Chalcopyrite, Gold, Lead, Silver**; ② War Eagle and Florida Mt. veins in T. 4 & 5 S, R. 3 & 4 W, all fissure-type deposits with mineralization occurring as ore shoots—**Argentite, Cerargyrite, Electum, Jamesonite, Pyrargyrite, Stibnite**, Silver-bearing **Tetrahedrite**, etc.; ③ many other regional mines, all abandoned, with occasional summer prospecting and placers, **Gold, Lead, Silver, Marcasite, Pyrite, Quartz** crystals, etc.; ④ NW a short distance to ghost camp of De Lamar, lode deposits and huge mines—**Gold, Lead, Silver**; ⑤ in mine dumps in Long Gulch—**agate, Quartz, Cassiterite**.

SHOSHONE COUNTY

AREA: ① region of the Coeur d'Alene mining dist. (as extension from Kootenai Co.); ② the Idaho Giant and other mines, as center of one of the world's richest Lead-Silver zones—**Argentiferous Tetrahedrite, Barite, Galena, Pyrite, Pyromorphite, Siderite, Sphalerite**, etc.; ③ the *Silver Belt*, in T. 48 N, R. 3 & 4 E, and area in which the chief product is Silver extending about 6½ E to W and 2½ mi. N to S, very many famous mines—**Argentiferous Tetrahedrite, Galena, Sphalerite**, etc.

AVERY: ① the area to S on divide between headwaters of the St. Joe and Clearwater R.—**Kyanite, Staurolite**; ② around Bathtub Mt.—**Staurolite**.

CALDER, W, in the St. Joe (Benewah Co.) mining district: ① many area mines in Shoshone Co.—**Copper minerals**; ② along the St. Joe R., in T. 45 N, R. 3, 4 & 9 E, lode mines—**Gold**. (Most Gold from Shoshone Co. comes from ores mined for Copper, Lead, Silver and Zinc.)

KELLOGG, the Bunker Hill and Sullivan mines (now combined) —fluorescent minerals (**Anglesite, Cerussite, Pyromorphite**), **Lead-Silver minerals**.

KINGSTON, area of the Pine Cr. dist. in T. 48 N, R. 1 & 2 E, numerous old mines—**Arsenopyrite, Gold, Pyrite, Stibnite**.

MURRAY (principal Gold mining part of Co.), lode mines—**Gold**.

PRICHARD, area creek placers—**Gold**.

WALLACE: ① many area mines, some world famous, such as the Sunshine Mine—**Gold, Lead, Silver**; ② T. 47 & 48 N, R. 4 & 5 E, placers—**Gold**; ③ S to Goat Mt., on S side of mt.—**Kyanite, Garnet**.

TWIN FALLS COUNTY

AREA, along Hwy. 93 and 3 to 4 mi. N of the NV state line—chalcedony **geodes**.

CASTLEFORD, W, across Salmon Falls, Cr. to Balanced Rock, take dirt rd. W and SW to Bruneau R. Canyon (Owyhee Co.), area—*Bruneau Canyon* **jasper**.

VALLEY COUNTY

BIG CREEK: ① area streams in T. 20 & 21 N, R. 9 & 10 E, placers—**Gold**; ② NW, to the Ramey Range dist. (extending into S part of Idaho Co.), many mines—**Copper minerals**; ③ E, to Long Valley, near confluence of Big Cr. with the Salmon R., one of the richest **Thorium** placers in Idaho—**Ilmenite, Garnet, Monazite, Zircon**.

CASCADE: (a) in pegmatites on mt. just to N; (b) also with agate to S and E of US 55; and (c) in placer tailings along Big Cr.—**agate, petrified wood**.

EDWARDSBURG, T. 20 N, R. 9 E, lode mines—**Gold**.

STIBNITE, area old mines—**Arsenopyrite, Gold, Pyrite, Stibnite**.

YELLOW PINE: ① T. 18 N, R. 8 E, placers—**Gold**; ② general region, in volcanic exposures—**Opal** (white spotted with Cinnabar); ③ T. 19 N, R. 8 & 9 E, area mines—**Arsenopyrite, Gold, Pyrite, Stibnite**; ④ T. 19 N, R. 9 & 10 E, as deposits distributed

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over an area of about 4 sq. mi.—**Cinnabar**; ⑤ T. 18 & 19 N, R. 11 E, Monumental Cr., near Thunder Mt., lode veins—**Gold**; ⑥ SSW about 40 mi. to Warm Lake, T. 15 N, R. 6 & 7 E—placer **Gold**.

WASHINGTON COUNTY

EATON, E 5 mi., along Grouse and Hog creeks—**agate** (banded, iris), **chalcedony**.

SEVEN DEVILS mining dist., the Peacock claim—**Bornite**, **Garnet**, **Melaconite**, **Powellite**, **Specularite**.

WEISER: ① Nutmeg Mt., at the Adaho-Almaden deposit in T. 10 & 11 N, R. 3 W—**Opal**, **chalcedony**, **Cinnabar**, **opalite**, **Pyrite**; ② N 30 mi., on the Snake R. in Sec. 7, 8, 17, 18 & 20, T 13 N, R. t W, many deposits as banded lenses—**Gypsum**; ③ NW 16 mi., in Fourth of July Canyon at jct. of July and Mann's creeks, in volcanic ash 500 ft. above creek bed, high quality—**opalized wood**.